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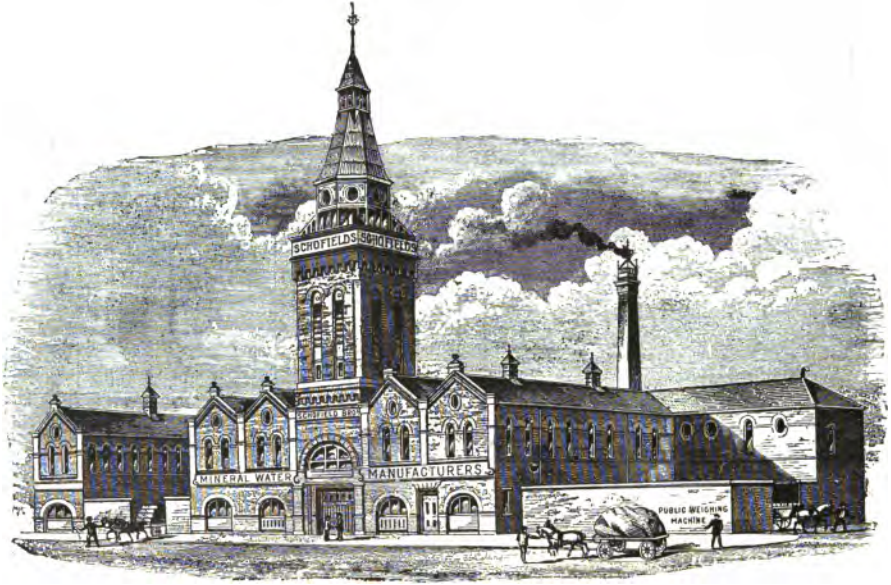

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PREFACE

THE object of University College is to make local provision for the systematic Higher Education of those who have passed the ordinary age for attendance at school, or who have attained a stage at which College methods of instruction may be advantageously substituted for the normal school curriculum. The need of some such provision for Higher Education had long been felt; it had been acknowledged that in this matter, Liverpool ought not to lag behind Manchester, Leeds, Sheffield, Nottingham, Bristol, and other great towns. More than one scheme had been devised or attempted, but for lack of permanent endowment or other causes had failed in attaining full success. But on May 24th, 1878, during 1878-81
the Mayoralty of Mr. A. B. Forwood, a Town's Meeting was held, at which the project of establishing a local College was for the first time formally laid before the public of Liverpool. The principal resolution, which gave expression to the design of the promoters, was as follows:—'That in the opinion of this meeting it is desirable that a College be established in Liverpool to provide such instruction in all the branches of a liberal education as would enable residents in the town and neighbourhood to qualify for degrees in Arts, Science, and other subjects, at any of the Universities granting degrees to non-resident students, and at the same time to give such technical instruction as would be of immediate service in professional and commercial life.' In accordance with a second resolution, thirty leading townsmen were nominated as a Committee, with the Mayor as Chairman *ex officio*, charged with the task of drawing up a scheme for the establishment of the College. The

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1878-81 duty of preparing a draft of the proposed scheme was delegated to a Sub-Committee composed of the following gentlemen, to whose ability, earnestness, and industry is very largely due the success which attended the establishment of the College in accordance with the scheme sketched out, elaborated, and carried into execution under the personal supervision of the majority of them, Mr. A. B. Forwood, Mr. Edward Lawrence, Rev. Charles Beard, Dr. J. Campbell Brown, Dr. A. T. H. Waters, Rev. George Butler, Mr. Robert Gladstone, Mr. W. A. Jevons, Sir James Picton, Rev. Canon Hume, Mr. Henry Duckworth, and Mr. Anthony Bower. For this Sub-Committee Dr. J. Campbell Brown, an active promoter of the movement in its earlier as well as in all its subsequent stages, and Mr. W. J. Stewart, acted as Honorary Secretaries.

During the Summer months the Committee matured its scheme, and on November 7th laid before the adjourned Town's Meeting, by which they had been nominated, a careful report proposing that

UNIVERSITY COLLEGE LIVERPOOL

should be the title adopted for the new institution, and recommending as the *minimum* necessary the establishment of seven Professorships, viz. :—

Mathematics and Experimental Physics,
Classical Literature and History,
Engineering and Practical Mechanics,
Logic, Philosophy, and Political Economy,
Modern Literature and History,
Chemistry,
Natural History ;

together with two Lectureships, viz. :—

Jurisprudence and Law,
Physiology ;

and estimating the capital cost of such a scheme at £75,000, independently of any sum expended upon

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purchase of site or erection of buildings. The report of the Committee was unanimously adopted by the adjourned Town's Meeting, and the Committee was reappointed, with some additions, 'with full powers to receive subscriptions, and generally to do all things that in its opinion may be necessary to carry into execution the scheme indicated in the report.' 1878-81

Armed with this commission the Committee resumed its work, but the amount of support received did not exceed conditional promises of contributions amounting to £10,000. To demonstrate the genuine interest felt in the success of the scheme by those best qualified to judge of its utility, it was determined to make an appeal to all those connected with literature, science, art, or any of the learned professions. The response was immediate and generous. In less than two months donations amounting to more than £3,000 were promised, and the Committee felt justified in renewing their appeal to the wealthier classes of the community. A fresh stimulus had been added to the movement by an address delivered by the late Bishop of Durham, then Canon Lightfoot, for the Liverpool Council of Education. In that address he had pictured, with all the enthusiasm of an antiquarian, the varied life and stir of colleges in the past, and out of it constructed the main lines of a college worthy of the Liverpool of to-day. The prophecy shortly began to fulfil itself. Mr. W. Rathbone, with his brothers, Mr. S. G. Rathbone and Mr. P. H. Rathbone, offered £10,000 for the permanent endowment of a Professorship; Colonel A. H. Brown, in conjunction with Messrs. Crosfield and Barrow, did the same; Mrs. Grant, of Rock Ferry, sister of the late Mr. Rayner, gave another £10,000 for a similar purpose. Mr. Edward Whitley and his co-trustee assigned from the Roger Lyon Jones Trust Fund a sum of £10,000 to the School of Medicine, with which that body endowed another Chair. By the energy of Mr. Samuel Smith and Mr. Alexander Balfour,

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1878-81 a fifth Professorship was endowed with a similar sum, contributed by Scotch firms carrying on business in Liverpool. A number of ladies and gentlemen, desirous of perpetuating the illustrious name of Roscoe in connection with an institution with whose objects he would most assuredly have sympathized, raised £10,000 to endow a Roscoe Professorship of Art. Another Professorship was founded by Lord Derby, who generously and not inappropriately followed up his father's gift to Liverpool of a Natural History Museum, by endowing a Chair of Natural History with a sum of £10,000. Through the instrumentality of Mr. Thomas Cope and Mr. Malcolm Guthrie, a number of manufacturers and traders were induced to contribute to a fund for the erection of Chemical Laboratories; while the shipbuilders, the members of both branches of the legal profession, and other gentlemen, contributed large sums for various purposes, special or general, connected with the College.

A convenient site for the College was found in the heart of the city, where the Committee secured a block of buildings, together with three or four acres of land, previously occupied by a portion of the Royal Infirmary, and immediately adjoining the long established Medical School. The necessary alterations of the buildings were carried out by Mr. Alfred Waterhouse, R.A., and finished early in 1882.

Meanwhile the important questions of the constitution and incorporation of the College had been carefully considered and successfully solved. The constitution was drawn up by a Special Committee, on which the body of Donors and the original Town's Committee were equally represented, and was submitted, together with a draft Charter, to Her Majesty and Her Privy Council, accompanied by a petition praying that the College might be incorporated by Royal Charter. The prayer was granted, and University College, Liverpool,

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received its Charter of Incorporation on October 18th, 1881. 1878-81

By the Charter, the Right Honourable the Earl of Derby was appointed the President, Mr. W. Rathbone, M.P., and Mr. Christopher Bushell the Vice-Presidents, and Mr. Robert Gladstone the Treasurer of the College. The supreme governing body was to be the Court of Governors, while very large executive powers were entrusted to the Council (mainly composed of elected representatives of the Governors), and the Senate (consisting of the College Professors), upon whom in their respective spheres rests the responsibility for the practical working of the College. In addition to the officers of the College the following eleven gentlemen were appointed by the Charter to be the members of the Council :— Mr. Edward Lawrence, Mr. Samuel G. Rathbone, Mr. William Crosfield, Mr. Arthur B. Forwood, Mr. Samuel Smith, Sir James Picton, Mr. A. T. Squarey, Mr. Reginald Harrison, Rev. George Butler, Rev. Charles Beard, and Mr. Thomas Cope.

After anxious enquiry and the fullest consideration, 1881-2
the important post of Principal was filled up by the appointment on June 11th, 1881, of Mr. G. H. Rendall, M.A., Fellow, Lecturer and Assistant Tutor of Trinity College, Cambridge, to whom was assigned the Chair of Classics and Ancient History. Appointments were in due course made to the Chairs of Physics, of Natural History, of Modern Literature and History, of Philosophy, and Political Economy, and, very shortly after the opening of the College, to the Chair of Chemistry. Lecturers were appointed in French, German, and Italian, and the College was opened for both Day and Evening Classes in January, 1882.

To complete this account of the origin and progress of the College, mention must be made of the action of the Corporation of the City of Liverpool, who, by a resolution passed on September 7th, 1881, undertook to

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1881-2 apply to Parliament for power to raise the sum of £30,000 to be expended in the purchase of the land and buildings already secured by the College, together with certain adjacent lands and buildings for the purposes of the College. This power was duly obtained by the 'Liverpool Improvement Act, 1882,' and gradual effect has been given to the provisions therein contained.

1882-3 In the Autumn of 1882 the Council of the College were able to separate the teaching of Experimental Physics from that of Mathematics by the appointment of a distinct Professor of Mathematics, and the £10,000 endowment of the Chair of Mathematics, the bulk of which had been already provided by the Shipowners' Fund, was finally completed, mainly by the liberality of Mr. W. P. Sinclair, early in the year 1884.

1883-4 Less than a year had elapsed from the first opening of the College, when the necessity for further advance began to force itself upon the attention of the College Council. The second Session of College work corroborated the first incomplete Session in proving the need for further subdivision of subjects and increase in the teaching staff, and in showing the comparative weakness and instability of a College unempowered to examine or confer Degrees upon its students, for whom London University provided the sole possible access to a University Degree. A still more urgent summons to action arose in the additional Charter granted to Victoria University, enabling it to confer Medical Degrees as well as Degrees in Science and Arts. It was plain that such a privilege would react with disastrous, if not fatal, effect on the Medical School of Liverpool, which from the first had acted in the closest concert with University College. The extension of power and status thus gained by the Manchester Owens College threatened certainly to cripple, not improbably to kill, the rival School of Liverpool. Nothing, it seemed, could avert the catastrophe except participation in the privileges of Victoria University;

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this could only be attained by the admission of the Medical School as part and parcel of University College into full membership in Victoria University. Private negotiations were set on foot to ascertain what increase of funds and organization such a step would involve. It became clear that it would be necessary to provide for an additional annual expenditure of about £1,000, and that of this the greater part, if not the whole, must be provided by capital endowment. Formidable as the task seemed, and unpropitious as were the times, the Council of the Court of Governors, convinced of the urgency of the need, determined to face the attempt. This resolution was taken in the spring of 1883, but no action followed till the end of the year. Shortly before Christmas, however, Mr. George Holt, Mr. W. Rathbone, M.P., Mr. S. G. Rathbone, Mr. Benson Rathbone, Mr. Theodore Rathbone, and Rev. J. H. Thom, all liberal supporters of the College at an earlier stage, came forward with a munificent offer of £10,000, provided the necessary remainder was realised within a specified time. Following this example, Mr. Henry Tate promised £5,000 on the same conditions. In January, 1884, a Town's Meeting was held. This was no less heartily and influentially supported than the two original Town's Meetings out of which the College took its formal rise, and the following resolutions were unanimously carried :— 1883-4

1.—'That in the interests of Higher Education in Liverpool, and to secure to the inhabitants of the city and neighbourhood direct access to University Degrees in Arts, Science and Medicine, the incorporation of University College in Victoria University is an urgent necessity.'

2.—'That a fund be raised to endow the additional Professorships and Lectureships required as conditions of the incorporation of University College in the Victoria University, and to defray the necessary expenses.'

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1883-4 To give effect to these resolutions a 'Victoria University Fund' was set on foot, designed to provide permanent Endowment for two Professorships and for the establishment of additional Lectureships, and to furnish funds for the erection of Chemical Laboratories and other needful extensions. This fund rose rapidly till it reached the figure of £30,000, and the Council, in March, found themselves in a position to announce the establishment of two new Professorships, viz., of Latin and of History, and to lay before Victoria University their formal application for admission as a College of the University. In the meanwhile, terms for the complete and effective amalgamation of the Medical School with the College had been harmoniously arranged, and the future constitution and relations of the two bodies carefully formulated. Statutes embodying the same were passed at the Spring Meeting of the Court of Governors, and on the completion of the necessary legal forms the Royal Infirmary School of Medicine, in June, 1884, terminated its existence as a separate body, becoming thenceforward the Medical Faculty of University College, with an initial representation of six Professors, subsequently (1888) determined at eight, upon the College Senate. At the close of the Session the Chairs of Latin and History were filled by Professor H. A. Strong and Professor J. M. Mackay respectively. The erection of new and extensive Chemical Laboratories, forming an integral part of the Victoria University Scheme, was commenced after a long series of complications and delays, in June, 1884, upon a site secured to the College by the generous assistance of the Municipality. Finally, on November 5th of the same year, the College was admitted as a College of the University, side by side with Owens College, Manchester.

1884-5 In the early half of the year 1885, the College was enriched by the endowment of two Scholarships—the Sheridan Muspratt Chemical Scholarship, founded for the encouragement of the study of Chemistry by the widow

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of the late Dr. James Sheridan Muspratt, of Liverpool, 1884-5
with a capital endowment of £1,500 ; and the Christopher Bushell Entrance Scholarship, with an endowment of over £1,000, being the residue of the testimonial fund, raised by friends and admirers in recognition of the great services rendered in Liverpool to the cause of education by Mr. Bushell, one of the two Vice-Presidents of the College. The remainder of the fund was expended upon a full length statue of Mr. Bushell, executed by Mr. Bruce Joy, which, after being temporarily accommodated in the Free Public Museum, was in 1892 transferred to its place in the Entrance Hall of the Victoria Building. In addition to these permanent capital endowments, three temporary Scholarships were offered to the College—the Bushell Scholarship of £40 per annum for three years, bearing the name of the donor, and open to Scholars of the Council of Education ; the Cropper Scholarship of the value of £20 a year for three years, bearing the name of the donor, and open to Council of Education Scholars ; the Ladies' Educational Association Scholarship of £30 a year for three years, open to ladies only.

The close of the Session was marked by the institution of a Professorship of Engineering, for the expenses of which a five years' guarantee fund was raised by Mr. W. Rathbone, M.P., Messrs. Smith, Edwards and Co., Mr. Alfred Holt, Mr. Ismay, Mr. Brunner, and other friends of the College. The appointment to the Chair was conferred upon Professor Hele-Shaw, previously Professor of Engineering at University College, Bristol. Temporary premises were taken over by the College for the accommodation of the new department, which commenced work in October, 1885.

Upon March 20th, 1886, in the unavoidable absence 1885-6
of the President, the new Chemical Laboratories were formally opened by Mr. Christopher Bushell, Vice-President of the College, and an inaugural address was delivered by the Right Hon. Sir Lyon Playfair, K.C.B.,

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1885-6 Vice-President of the Council of Education, and President of the British Association for the Advancement of Science. The buildings were brought into full and active use at the commencement of the Summer Term.

In the Session 1885-6, the Medical side was enriched by the creation of two Tutorial Scholarships, each of the value of £100 a year, endowed, by the liberality of Mr. George Holt, with a capital donation of £2,000. Also in connection with the Evening Classes, ten Working Men Studentships, each of the value of £5, were tentatively established, by gifts from Mr. A. Booth, Mr. S. Smith, M.P, and other friends of the College.

1886-7 In December, 1886, Sir Andrew B. Walker announced his desire to erect College Engineering Laboratories for the use and benefit of the citizens of Liverpool, as a suitable method of commemorating the Jubilee year of her Majesty's reign. To this end he placed at the disposal of the Council a sum of £15,000, subsequently increased to £23,000, that nothing might be lacking to the new Laboratories in completeness of scope or of equipment. A site fronting upon Brownlow Hill was selected as the most appropriate, and Mr. Alfred Waterhouse, R.A., was appointed architect, with instructions to adhere to the same style and materials as had already been adopted for the Chemical Laboratories. The detailed preparation of plans was confided to a Committee consisting of representative engineers, shipbuilders, shipowners, etc., viz.—J. O. F. Aspinall, Anthony Bower, G. Daglish, G. F. Deacon, C. Dunscombe, S. W. Johnson, Alfred Holt, B. E. Johnstone, G. F. Lyster, Hector McColl, John Pearson, T. B. Royden, H. Shield, W. G. Scott, W. J. C. Thorburn, F. W. Webb, and H. H. West, together with the following Members of Council :—Malcolm Guthrie, W. Laird, E. K. Muspratt, Sir David Radcliffe, Principal Rendall, and Professor Hele-Shaw. Building operations commenced in the summer of 1887, and the building was formally opened for use at the beginning of the Session,

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October, 1889. For the decoration of the Entrance Hall, 1886-7
Sir A. B. Walker presented to the College the statue of H.R.H. the late Duke of Albany, executed by Count Gleichen in the year 1886.

Sir A. B. Walker's gift was rapidly followed by like munificence on the part of Mr. Thomas Harrison, who, in December, 1886, offered £10,000 for the permanent endowment of a Harrison Chair of Engineering. Thus within two years of its provisional creation, upon the strength of temporary guarantees, the department of Engineering was equipped upon a scale unsurpassed at any College or University in the United Kingdom, and placed upon an educational basis as permanent as that secured to any other of the Arts or Sciences.

In the Autumn of 1886, certain private friends of the late Edward Rathbone, many of whom shared his own eager interest in all that concerned the work and welfare of University College, collected amongst themselves a fund of upwards of £700, designed to perpetuate in Liverpool the name and memory of one whose incomplete career gave rich promise of civic worth and usefulness. It was eventually determined to devote the fund to the permanent endowment of a Scholarship bearing the name of Edward Rathbone, and employed for the promotion of higher education among youths entering upon a commercial or business career. The Rev. J. Thom likewise founded prizes for English Literature, and for Philosophy and Political Economy, commemorative of his nephew, Edward Rathbone, and with his name attached in perpetuity.

Shortly after this, Mr. W. Rathbone, M.P., and Mr. Ashton Rathbone, acting conjointly as trustees of certain funds left at their disposal by the late Edward Rathbone, announced their desire to employ a part of these funds in the endowment of a Commercial Scholarship, designed to further a cause which the deceased had very close at heart, and for this purpose placed at the disposal of the Council a sum of £1,000, with which a trust was

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1886-7 created in accordance with the aims and wishes of the founders.

In the course of the same Session, 1886-87, Mr. George Holt enriched the Library with a valuable donation of £1,000, to be expended by instalments evenly distributed over the following ten years.

In March, 1887, the death of Mr. Christopher Bushell deprived the College of the valued services of one who, as an original promoter, as first Vice-President, and as a constant Member of Council, identified himself with every stage in the development of the College, and whose name will always remain intimately associated with its earlier struggles and successes.

1887-8 At the opening of the Session 1887-8, the Council issued an appeal, urging upon the public the necessity of providing permanent buildings for the main work of the College, upon the Arts and Science side, and suggesting the appropriateness of such a building as a memorial of the year of Jubilee. Full plans were prepared by Mr. Waterhouse for the building, estimated to cost £35,000; but admitting of erection in successive sections, at a cost of £16,000, £10,000, and £10,000 respectively. Before the end of the year promises of liberal support were secured, and in February a special meeting of friends and supporters of the College was held at the Town Hall, under the presidency of the Mayor, Mr. T. W. Oakshott, himself one of the largest contributors. Before June, 1888, a sum of £16,000 had been raised, and the Council determined to proceed with the first block of the new buildings, providing Library, Class Rooms, Senate Chambers, Students' Rooms, and Private Rooms for Professors. In the same month, the Liverpool Jubilee Memorial Committee, appointed in 1887 to raise funds for the erection of a Clock Tower and Chimes to commemorate the year of Jubilee, decided to connect the Tower with the new College buildings, and entrusted the funds at their disposal to the College Council for

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carrying out a Tower designed by Mr. Waterhouse in accordance with plans approved by the Liverpool Jubilee Memorial Committee. In November of the same year, Mr. Henry Tate, already a large benefactor to the College, offered to undertake the entire expense of the large Library block, amounting to £20,000, and thus enabled the Council to proceed to the erection of the entire range of buildings designed, the foundations of which were laid during the spring of 1889. The name 'Victoria Building' was appropriated to the whole block, having the Jubilee Tower for its central feature, and the Tate Library perpetuating the name of the donor. For the decoration of the Library, Mr. W. Rathbone entrusted the execution of a bust of the donor to Mr. A. Gilbert, A.R.A., and Mr. Tate himself purchased and presented to the College the valuable set of engravings collected by the late Dr. Shadford Walker, for fourteen years a Lecturer in the Medical School, and well known as a connoisseur in this branch of Art. 1887-8

In April, 1888, the College sustained an irreparable loss in the death of the Rev. Charles Beard. In securing its first foundation and endowment, in framing its constitution, in moulding its policy and developing its work, his personal influence out-weighed that of any other individual; and to the day of his death he was unsparing in time, strength, and personal solicitude, in inspiring its energies and forwarding its interests. To perpetuate his memory in Liverpool, Mr. H. Tate set apart a sum of £2,000 for the creation of College Scholarships, bearing the name of Charles Beard, to be applied for the advancement of Arts culture, and more particularly the study of History.

In December, 1888, Mr. Holbrook Gaskell, J.P., offered to the Council a sum of £5,000 towards the endowment of a Chair of Botany, on condition of the necessary remainder being provided within three months. By the end of March, 1889, more than £9,000 in all was 1888-9

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1888-9 subscribed, and a permanent Lectureship was thereupon created, to be elevated in due course into a full Professorship. This was accomplished in February, 1894, by a further gift of £1,000 from Mr. Holbrook Gaskell, and Mr. R. J. Harvey Gibson, M.A., after eight years' service as Lecturer, received the full status of Professor.

In 1888, 1891, 1895, and again in 1899, the Ladies' Educational Association renewed their Scholarship for ladies, of the value of £25 for three years; and in 1889, and again in 1893, Mr. S. Smith, M.P., re-endowed Working Men's Studentships, similiar to those established in 1886.

1889-90 In 1890, Mr. Henry Tate invested £1,000 by way of terminable annuity, yielding £100 for twelve and a half years, for the provision of Technical Science Scholarships, tenable at University College.

1890-1 In 1891, two new Professorships were placed on a permanent footing. To meet an obvious local want, and to advance sound training in Commercial Science, a special Lectureship was created in 1888, resting upon a three years' guarantee fund, and charged with the teaching of Political Economy, Commercial History, and Commercial Geography. Mr. J. T. Brunner, M.P., from the first watched the experiment with sympathy, and at the expiration of the three years' term came forward with a permanent endowment of £10,000 for a Brunner Chair of Economic Science, designed to commemorate the name of his father, Rev. John Brunner, for many years an ardent promoter of education in Liverpool, and to be associated with the memory of his son, Mr. S. H. Brunner, a student in the Engineering Department of the College at the time when an unhappy fatality in Lake Como cut short a career bright with unusual promise. Mr. E. C. K. Gonner, M.A., previously Lecturer in the subject, was appointed first occupant of the Chair. While the number of Endowed Chairs on the Arts and Science side had grown to twelve, the professional teaching of the Medical Students

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remained without endowment. The need of an endowed 1890-1
Professorship of Physiology had been long felt and urged, and for its realization the Council were indebted to one of their own number, Mr. George Holt, who, in June, offered £10,000 for the endowment of a Chair of Physiology, to which, by desire of the Council, the donor's name was attached. In the closing month of the Session Mr. F. Gotch, M.A., was elected first Holt Professor and to ensure efficient Laboratory equipment without burdening the general College income, Mr. G. Holt subsequently supplemented the Professorial endowment with a further sum of £5,000, the annual increment to be expended upon Laboratory maintenance and management.

Besides these large endowments, the Session was rich in other benefactions. Dr. R. Gee, for twenty-nine years a Lecturer in the Medical School, at his death bequeathed to the College £1,000 for the creation of a Medical School Scholarship. A Greek Scholarship was endowed by the Misses Hornby with a capital sum of £500, to perpetuate the memory of their father, Rev. Thomas Hornby, for forty-two years Vicar of Walton, near Liverpool; and a sum of £2,000 L.N.W. Debenture Stock was assigned to the College by Sir Richard Moon, late Chairman of the L.N.W.Ry. Company, for the creation of Engineering Scholarships, Exhibitions, or Prizes, for the benefit of young men who had passed a term of service in the Crewe, Earlestown, Wolverton, or other of the recognized works of the Company. An endowment fund of £1,400 was raised for the support of the Italian Lectureship; and for the further development of scientific teaching important donations were made by Mr. L. Mond in sustentation of Chemistry, and Mr. C. W. Jones and Mr. W. Rathbone, M.P. to the Department of Engineering.

By the Local Customs and Excise Act of 1890, large funds were placed at the disposal of the City Council for the furtherance of Technical and Commercial Instruction.

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1890-1 For due administration of these funds, a representative Technical Instruction Sub-Committee was appointed by the Library, Museum and Arts Committee of the City Council. From the first year's revenue certain sums were allotted for the purchase of scientific apparatus; among others the following to University College—for Physics, £750; Engineering, £250; Chemistry, £250. In the subsequent allocation of annual grants for Technical Instruction, the City Council approved the allotment of grants of £500 annually to Physics (including Electro-technics), £250 to Engineering, £250 to Chemistry, £200 to the Engineering Department for evening technical lectures and classes organized specially for the needs of working men, and £100 for higher teaching in commercial subjects. A sum of £400 was assigned for methodical instruction in the Art of Teaching, the administration of which was deputed to the College Council.

1891-2 In the Session 1891-92, a field eminently suitable for College Athletics was generously placed at the disposal of the Athletic Club, free of rent, by Mr. Chas. W. Jones, of Wavertree, and prepared for the uses of cricket, football, and lawn tennis.

Ten years of steady effort had thus given full effect to the scheme of the first promoters of the College, except in one particular, the institution of a permanent Lecture-ship in Jurisprudence and Law. In the earliest years of College work the Council had made provision for courses of Law lectures, delivered by non-resident Lecturers. This imperfect beginning shortly led on to the formation of a Board of Legal Studies, composed of representatives of the College, the Incorporated Law Society, and the Law Students' Association, all of which made annual contributions towards the maintenance of systematic courses of lectures suitable for students of Law. In 1892 the time was ripe for a new advance. By the energy of Mr. A. F. Warr, Acting President of the Liverpool Incorporated Law Society, Mr. J. W. Alsop, and many

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other members of the legal profession, a three years' guarantee fund was raised, providing for the appointment of a resident Professor, as well as two or more non-resident Lecturers, and for the establishment of a Law Faculty in the College, empowered to act with representatives of the Incorporated Law Society and Law Students' Association upon a reformed Board of Legal Studies. Large powers of administration, financial and executive, were entrusted to the new Board, whose first act was the appointment, in July, 1892, of Mr. Edward Jenks, M.A., Fellow of King's College, Cambridge, and late Professor of Law of Melbourne University, to the new Professorship of Law. 1891-2

In October, 1892, the Victoria Building was sufficiently advanced for occupation, though it was necessary to defer the official opening until December, 1892, when the ceremony was performed by Earl Spencer, K.G., Chancellor of the Victoria University. On the occasion of the opening, Her Majesty the Queen was pleased to intimate, through the Chancellor of the Duchy of Lancaster, her desire to contribute from the funds of the Duchy a sum of £2,000 to be applied for the permanent benefit of the College; and with Her Majesty's gracious assent it was agreed to treat the sum as the nucleus of a fully endowed Queen Victoria Chair of Law. The sum of £2,373 12s. 2d., contributed by the Legal Profession to the foundation of the College, was added to this amount, and early in 1894 the gratifying announcement was made that the entire remainder, £5,680, had been promised among members of the legal profession, including contributions from the Lord Lieutenant of the County, and the Lord Mayor. On the completion of the fund in 1895, Professor Jenks was, on the recommendation of the Board of Legal Studies, elected first Queen Victoria Professor of Law for a term of five years. 1892-3

The old College building was now re-adapted for the purposes of Physics, Biology, and Botany, and a new Electrotechnical Department was organized, in readiness

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1892-3 for the opening of the Session 1892-3. The Refectory was moved from the basement to temporary buildings in the College grounds, and a Physiological Laboratory was provided in the same way. Thus on many sides welcome expansion was secured, to the great advantage and encouragement of all concerned.

Failing health had rendered it impossible for Lord Derby, as President of the College, to take the part which he had desired in the inauguration of the Victoria Building, and in April, 1893, the College had to deplore the death of her first President. To his warm support of the movement for a local College, to his liberal contributions, to his acceptance of the position of the Presidential Office, and to the sound judgment, interest and zeal, with which he discharged the duties of that office, the College owed much of its rapid success and early attainment of University position. As a mark of his regard he bequeathed to the College a sum of £2,000 for the permanent endowment of Scholarships or Exhibitions.

1893-4 In October, in response to the unanimous resolution of the Court of Governors, his brother and successor to the title, the 16th Earl of Derby, accepted the position of President, and on February 21st, 1894, was ceremonially received upon the occasion of his first visit to the College. In his address from the Chair the new President enforced the needs of the Medical School, which, upon the medico-scientific side, had become a cause of grave solicitude to the Council and Members of the Senate. This pronouncement, which was based on careful inquiries and reports, was speedily followed by action. In April, Mr. George Holt offered £10,000 for the endowment of a Chair of Pathology, shortly after supplementing it, as in the case of Physiology, with £5,000 for the maintenance of Pathological Laboratories; and in the same month the President himself supplied the endowment for a Derby Chair of Anatomy. Thus a position which had seemed

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precarious was rendered stable and secure, and the three essential Chairs of Physiology, Pathology, and Anatomy were placed upon a footing of permanent endowment. Professor Boyce, of University College, London, was appointed to the George Holt Chair of Pathology, and Professor Paterson, of Dundee College, to the Derby Chair of Anatomy. In July, the Rev. S. A. Thompson Yates undertook to provide combined Physiological and Pathological Laboratories at a cost of £15,000. The choice of site and preparation of plans opened large questions regarding the position and future re-construction of the Medical School Buildings, and, after friendly negotiations with the Royal Infirmary, it was decided to erect the Laboratories on land adjoining the East and South-East corner of the School, with an entrance on the College quadrangle that would combine with the main entrance of the completed School. Tenders for the matured plans were eventually taken up in the Summer term of 1895. Meanwhile, to meet immediate needs, Mr. G. Holt bought the small block of houses at the corner of Ashton Street, and turned them into Laboratories fitted with every convenience for the study of Pathology and Bacteriology. They were opened for use in the Lent term, 1895, and to provide funds for maintenance, Mr. Holt subsequently purchased, repaired, and conveyed to the College the three adjoining houses in Brownlow Hill. 1893-4

The same Session, 1893-4, witnessed a notable advance in the resources of the Library. The opening of the Tate Library in 1892, and the appointment of Mr. J. Sampson as Librarian, encouraged donations of books from various quarters, and led to the immediate incorporation of the valuable Medical School collection of books with the main College Library. In the summer of 1893, the Rev. S. A. Thompson Yates placed £500 at the disposal of the Library Committee for the purchase of books on Literature, History, and Classics, at the same time

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1893-4 investing a sum of £1,000 for the purchase of works on Economic Science or the Classical Languages, designed to commemorate the name and memory of his father, Mr. Samuel H. Thompson, of Thingwall. At Easter, 1894, Mr. Henry Tate himself, after inviting lists of authorities from the heads of departments, assigned a sum of £5,500 for the purchase of standard works in general accordance with the recommendations received, and thus laid the foundations of a comprehensive collection of books in many different departments of learning. This gift he subsequently, in January, 1896, supplemented by a trust endowment of £5,000, the income to be applied to the maintenance and extension of the Library. The Library was further enriched by the bequest of some 3,000 volumes belonging to the Rev. J. H. Thom, a warm friend and life-governor of the College, including books and papers of special interest that had belonged to J. Blanco White. And in the same year, 1894, the books of the Royal Institution Library were transferred for safe keeping and convenience of reference to a special annexe of the College Library, and reinforced the scientific literature with valuable Journals and Proceedings.

A new departure was at this time made in the application of the Chair of Art. As the result of numerous conferences and discussions, in which the Senate, the Liverpool Architectural Society, the Technical Instruction Committee, and the City Council took part, it was determined to establish a City 'School of Architecture and Applied Arts,' managed by a representative Board, and supported by a yearly grant of £1,000 from the funds devoted to Technical Instruction. The Council on their side agreed to apply the Roscoe Chair of Art to Architecture, and to connect it for a term of five years with the general scheme, upon the proviso that the College should have four representatives upon the Board of Managers, two nominated by the Council, and two by the Senate, and that the Professor of Architecture should

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have an *ex officio* seat upon the Board, and act, subject to its decisions, as Director of the School. Upon this footing, Mr. F. M. Simpson was, in August, 1894, elected Roscoe Professor of Architecture for a term of five years. In the Autumn of 1895, the School of Architecture and Applied Arts made application to erect temporary buildings within College Grounds for carrying on the work of the School. Subject to certain conditions safeguarding the future use of the site, the desired permission was accorded, and the various activities of the School thus became centred at the College. 1893-4

In the Session 1894–5, Mr. F. H. Gossage and Mr. T. S. Timmis combined to erect the large Quantitative Laboratory which had formed an integral part of the Chemical Laboratories' design, as a memorial to the late Mr. William Gossage, to be permanently associated with his name. The Memorial Laboratory, costing £7,000, was formally opened in December, 1896, and generous gifts from Sir John T. Brunner, Mr. E. K. Muspratt, Messrs. Lever Brothers, and others, furnished funds for the complementary portions of design, including the Metallurgy Department, specific Laboratories and stores. Hydraulic apparatus and other improvements were added to the Engineering Laboratories by Mr. Charles W. Jones and Mr. R. Heap, and Mr. W. P. Hartley built a new Lecture Room for the Physics Department. 1894-5

In recognition of the distinguished services of Dr. Kuno Meyer, a five years' guarantee fund was raised, and the Lectureship in Teutonic Languages converted into a Professorship; the French Lectureship was also improved and made independent of class fees.

In the Session 1895-6, a Memorial Scholarship in Marine Engineering, associated with the name of Sir Edward Harland, was founded by the Directors of the Oceanic Steam Navigation Company. 1895-6

The first instalment of the reconstructed Medical School, consisting of the Anatomical Workshops, Stores

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1895-6 and Courtyard, was built by the efforts of the Medical Faculty, Mr. George Holt undertaking the cost of the fabric, while furniture and fittings were defrayed by general subscription. The building was hardly complete when, in April, 1896, the decease of Mr. George Holt deprived the College of one of the wisest and most sympathetic of Councillors, and most generous of benefactors. In accordance with his last wish, £1,000 was provided for the building and equipment of a temporary Natural History Museum, in the location and plans of which he had taken a lively interest.

Mr. Holbrook Gaskell once more befriended the Botanical Department by constructing and furnishing a good Practical Room and Working Laboratory in the roof of the old building. At the end of the Session the Council created a new Lectureship in English, and offered it to Dr. Priebsch, who had already conducted English and Anglo-Saxon Classes in the College. Rev. J. Sephton, for many years Head Master of the Liverpool Institute, was, earlier in the Session, created Honorary Reader in Icelandic, and thus the College was enabled to provide teaching of the highest order for students proceeding to Honours in the English or Modern Language Schools of
1896-7 Victoria University. Following this precedent, Mr. E. H. Parker, of Liverpool, for twenty-six years an active member of the British Consular Service in China, was appointed Honorary Reader in Chinese. The vacancy in the Queen Victoria Chair, caused by the election of Professor Jenks to the Readership in English Law at Oxford University, was filled by Professor Emmott, M.A., LL.M., of Trinity Hall, Cambridge, and of the John Hopkins University.

By the will of Mrs. Gee, widow of Dr. R. Gee, Lecturer in the Medical School, the College, as residuary legatee, received a bequest amounting to £7,069 13s. 6d. The legacy was assigned for the benefit of the Medical Department by the creation of Tutorial Fellowships,

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Scholarships or Exhibitions designed to promote the study and knowledge of one or more principal subjects of medical science, such as Anatomy, Pathology, or Physiology. 1896-7

During the Session a School of Sanitary Science was instituted by concerted action with the Technical Instruction Committee, the Health Committee, and the School of Science, Technology and Art, and, on the recommendation of the Medical Faculty and Senate, the Lectureship in Hygiene was converted into a Professorship of Public Health, to which the Lecturer, Dr. E. W. Hope, Medical Officer of Health to the City, was appointed without advertisement.

A benefaction of £250 received from the Rev. C. H. Wellbeloved and J. K. Welby, executors of the estate of Mrs. Elizabeth Read, was devoted by the Council towards the cost of preparing the Library Catalogue. A legacy of £500 was bequeathed by Anne Templeman for the encouragement of the study of Welsh or Celtic by the establishment of a Prize or Scholarship associated with the name of the late John Owen.

In June, 1897, the Report of the Special Commissioners appointed by the Chancellor of the Exchequer to visit the University Colleges receiving grants in aid from public funds, was submitted to the House of Commons, together with the Treasury Minutes and the Report of the Special Treasury Committee allocating the increased grant among the University Colleges. The grant assigned to University College, Liverpool, was raised from £1,500 to £3,000 a year.

Throughout the Sessions 1895-96 and 1896-97 the needs and further development of the College engaged the careful consideration of the Senate, and were finally embodied in a report submitted to the Council in June, 1897.

The end of the year 1897 marked the first stage in the development of the College. Dr. Rendall, who had 1897-8

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1897-8 held the offices of Principal and Professor of Greek since its foundation, was appointed Head Master of Charterhouse, and left Liverpool at the end of the Autumn term. The Council recorded its strong sense of the value of his services in the following minute :—

'The Council, in accepting as it does with the deepest regret, the resignation of Dr. Rendall of the position he has occupied in connection with University College since its foundation, desires to place on record its sense of the great services he has rendered to it, as well as of the lasting obligation to him under which the City of Liverpool has been placed by the great work he has accomplished for the cause of education.'

Opportunity was taken of the vacancy caused by Dr. Rendall's retirement to separate the offices of Principal and Professor of Greek ; and a Chair of Natural Philosophy was founded. Mr. R. T. Glazebrook, M.A., F.R.S., Fellow of Trinity College, Cambridge, became Principal and Professor of Natural Philosophy ; Mr. G. A. Davies, M.A., Fellow of Trinity College, Cambridge, was elected to the Professorship of Greek. The long services rendered to the College by Mr. Hebblethwaite were at the same time recognized by his appointment to a Lectureship of Classics, with the honorary title of Assistant Professor.

A School of Commerce was founded during the year, under the control of a Committee consisting of representatives of the City Council and of the Council and Senate of the College, to provide instruction in the various branches of a commercial education. The School of Hygiene, which was founded in 1897, under the control of a similar Committee, was established in Ashton Hall, a building which was given to the College by the late Mr. George Holt. A Museum in connection with the School was opened on July 4th, by Mr. Alderman Houlding, Lord Mayor of Liverpool, who, as Chairman of the Committee, had done much to forward the scheme.

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During the Session, the Dean of the Arts Faculty presented his first report to the Senate, containing an historical retrospect of the past, and indicating the lines of future development. 1897-8

The establishment of a Women's Hall of Residence remains to be recorded. An independent committee was formed for this purpose, with the cordial sympathy of the College authorities, and a convenient house in Edge Lane was secured and fitted for the reception of women students.

The Session 1898-1899 commenced with the opening of the Thompson Yates Laboratories by Lord Lister, on October 8th. The Earl Spencer, Chancellor of the University, presided at a great meeting in St. George's Hall, at which the Honorary Degree of Doctor of Science was conferred on Lord Lister, who delivered an address. Afterwards, an adjournment took place to the College, and the Laboratories were opened by Lord Lister. In the evening the Lord Mayor gave a banquet at the Town Hall, at which the opportunity was taken to press the necessity of completing the Medical School and of erecting a Physics Laboratory. Towards the former of these objects a sum of £13,000 was promised by Lord Derby, Mrs. George Holt and Miss Holt, Mr. R. Brocklebank, and Mr. John Rankin. Plans were prepared by Mr. Waterhouse and approved by the Council. Towards the Physics Laboratory a sum of about £25,000 was promised by various friends. 1898-9

A School of Tropical Medicine in connection with the Royal Southern Hospital was established during the Session, under the control of a Committee consisting of representatives of the College, the Royal Southern Hospital, the Chamber of Commerce, and other bodies. The Committee appointed Major Ronald Ross, of the Indian Medical Service, as Lecturer on Tropical Medicine. The establishment of the School was rendered possible by a promise from Mr. A. L. Jones of a subscription of

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1898-9 £350 a year for three years, and his generous example was largely followed.

In consequence of an increased grant from the Technical Instruction Committee for the purposes of training in Education, the Council were able to establish a Professorship of Education, to which Mr. W. H. Woodward, who for seven years had held the post of Lecturer, was elected, and also to appoint Miss Dorothea Pease, of Newnham College, as Mistress of Method and Assistant to the Professor of Education.

In the early part of the Session the College lost, by death, the services of Dr. Wallace, Professor of Gynæcology. Dr. Henry Briggs was appointed his successor, while Dr. T. B. Grimsdale became Lecturer in Gynæcology.

The post of Lecturer in English, vacated by the resignation of Dr. Priebsch, remained vacant during the session, but was filled in July by the appointment of Mr. H. C. Wyld, B.Litt., Oxford.

1899-1900 The need of modifying the original Charter of the College had long been felt, and early in the year 1900 a Supplemental Charter was granted by the Queen in Council, extending the powers of self-government then possessed by the College, and bringing the College into closer relations with the authorities of the City, and with local institutions, by providing for their representation on the Court of Governors.

The Session saw fresh extensions of the College buildings. Work began upon the first block of the new Medical School, and a site in Brownlow Street was cleared in the spring of 1900 for the new Botanical Laboratory that Mr. W. P. Hartley offered to build and to equip.

During the year the College received various benefactions. The Library was enriched by a bequest under the will of the late Mr. T. Glazebrook Rylands, who left to the College a number of early printed books, and

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a general collection of some 2,000 volumes of considerable value. 1899-1900

A system of Commercial Day Classes came into operation during the Session. The Council also sanctioned the establishment, in 1901, of a Day Training College for Women Teachers upon the same lines as the one already established for men.

The changes in the staff of the College during the Session were exceptionally numerous and important. At the end of the year 1899, Mr. R. T. Glazebrook, the Principal, and Professor of Natural Philosophy, resigned his position, having accepted the Directorship of the National Physical Laboratory. He was succeeded in the Principalship by Mr. A. W. W. Dale, M.A., Fellow and Tutor of Trinity Hall, Cambridge, who was also appointed Professor of Classical Literature. In June, 1900, it was announced that Dr. Oliver Lodge had been nominated by the Crown as the first Principal of the new University of Birmingham, and that he had accepted the appointment. The loss to the College and to the City was severe. Dr. Lodge had been associated with the College ever since its foundation. He had taken an active part in shaping its growth, and in controlling its policy. He had increased its reputation in the country by his eminent achievements in scientific research, and, at the same time, breadth of sympathy and of outlook had made him a power outside the domain of science. At the close of the Session, Professor Raleigh was also nominated by the Crown to the Chair of English Literature in the University of Glasgow, where he succeeded Professor A. C. Bradley, as he succeeded him in Liverpool. In Professor Raleigh the College lost a stimulating and brilliant lecturer, and a literary critic of growing distinction.

At the end of his five years' appointment, Dr. Friedel, the Lecturer in French, did not seek re-appointment; and he was succeeded by Dr. C. Bonnier, of Halle, for

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1899-1900 many years resident in Oxford. Professor Kuno Meyer was re-appointed for life to the Chair of Teutonic Languages, and Professor Emmott to the Queen Victoria Chair of Law for a further term of seven years. Mr. Plummer's services to the College as Lecturer in Astronomy were recognized by his appointment to an Honorary Readership.

During the session the College lost two of its most loyal and conspicuous friends—Mr. Andrew Tucker Squarey, who had taken an active part in its original foundation, and Sir Henry Tate, one of its most generous benefactors.

By distinguished success as a student, and by devotion as a teacher, Dr. Howard, the Demonstrator in Physics, had made a distinct place for himself among the College staff, and his death gave rise to a remarkable expression of universal regard and regret.

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1900-1901

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SEPTEMBER, 1900

DATE		NOTICES, ETC.
1	S	
2	S	12th Sunday after Trinity.
3	M	
4	Tu	
5	W	
6	Th	
7	F	Last day for payment of Fees* for Vict. Univ.
8	S	September Examinations.
9	S	13th Sunday after Trinity.
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	S	14th Sunday after Trinity.
17	M	Entrance in Arts, Preliminary, and Intermediate
18	Tu	Examinations begin.
19	W	
20	Th	
21	F	First M.B. Examination begins.
22	S	
23	S	15th Sunday after Trinity.
24	M	
25	Tu	
26	W	
27	Th	
28	F	Vict. Univ. Board of Studies Meeting (Exam.
29	S	results).
30	S	16th Sunday after Trinity.

* If no fee be due, notice, in writing, must be given to the Registrar of the University by this date.

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OCTOBER, 1900

DATE		NOTICES, ETC.
1	M	Winter Session (Medical) begins. Registration of Students. Entrance Examination.
2	Tu	Registration of Students. Entrance Examination.
3	W	Registration of Students.
4	Th	Commencement of the Autumn Term.
5	F	
6	S	
7	S	17th Sunday after Trinity.
8	M	Evening Classes begin.
9	Tu	
10	W	
11	Th	
12	F	
13	S	
14	S	18th Sunday after Trinity.
15	M	
16	Tu	
17	W	
18	Th	Vict. Univ. Board of Studies Meeting.
19	F	
20	S	
21	S	19th Sunday after Trinity.
22	M	Vict. Univ. Council Meeting. Last day for giving
23	Tu	notice and payment of Fees* for December
24	W	Examinations.
25	Th	
26	F	
27	S	
28	S	20th Sunday after Trinity.
29	M	
30	Tu	
31	W	

* If no fee be due, notice, in writing, must be given to the Registrar of the University by this date.

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NOVEMBER, 1900

DATE		NOTICES, ETC.
1	Th	
2	F	
3	S	
4	S	21st Sunday after Trinity.
5	M	University College admitted into Vict. Univ.,
6	Tu	1884.
7	W	
8	Th	Vict. Univ. Court Meeting.
9	F	
10	S	
11	S	22nd Sunday after Trinity.
12	M	
13	Tu	
14	W	
15	Th	
16	F	
17	S	
18	S	23rd Sunday after Trinity.
19	M	
20	Tu	
21	W	
22	Th	Vict. Univ. Board of Studies Meeting.
23	F	
24	S	
25	S	24th Sunday after Trinity.
26	M	
27	Tu	
28	W	
29	Th	
30	F	

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DECEMBER, 1900

DATE		NOTICES, ETC.
1	S	
2	**S**	**1st Sunday in Advent.**
3	M	
4	Tu	
5	W	
6	Th	Vict. Univ. Council Meeting. **Final B.A. and**
7	F	**B.Sc. Exams. begin.**
8	S	
9	**S**	**2nd Sunday in Advent.**
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	**S**	**3rd Sunday in Advent.**
17	M	College Examination.
18	Tu	College Examination.
19	W	College Examination.
20	Th	College Examination. **Vict. Univ. Board of Studies Meeting (Exam. Results).**
21	F	College Examination. Evening Classes end. End
22	S	of the Autumn Term.
23	**S**	**4th Sunday in Advent.**
24	M	
25	Tu	**Christmas Day.**
26	W	
27	Th	
28	F	
29	S	
30	**S**	**1st Sunday after Christmas.**
31	M	

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JANUARY, 1901

DATE		NOTICES, ETC.
1	Tu	
2	W	
3	Th	
4	F	Entrance Examination.
5	S	Entrance Examination. Registration of Students.
6	S	**1st Sunday after Epiphany.**
7	M	Commencement of Lent Term.
8	Tu	
9	W	
10	Th	
11	F	
12	S	
13	S	**2nd Sunday after Epiphany.**
14	M	Evening Classes begin.
15	Tu	
16	W	
17	Th	
18	F	
19	S	
20	S	**3rd Sunday after Epiphany.**
21	M	
22	Tu	
23	W	
24	Th	
25	F	
26	S	
27	S	**4th Sunday after Epiphany.**
28	M	
29	Tu	
30	W	
31	Th	

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FEBRUARY, 1901

DATE		NOTICES, ETC.
1	F	Last day for sending in Dissertations for M.D. to Victoria University.
2	S	
3	S	Septuagesima.
4	M	
5	Tu	
6	W	
7	Th	
8	F	
9	S	
10	S	Sexagesima.
11	M	
12	Tu	
13	W	
14	Th	
15	F	
16	S	
17	S	Quinquagesima.
18	M	
19	T	
20	W	
21	Th	
22	F	
23	S	
24	S	1st Sunday in Lent.
25	M	
26	Tu	
27	W	
28	Th	

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MARCH, 1901

DATE		NOTICES, ETC.
1	F	Last day for payment of Fees for Vict. Univ. March
2	S	Exams. Last day for Cert. of Attendance for [Vict. Univ. March Exams.
3	S	2nd Sunday in Lent.
4	M	
5	Tu	
6	W	
7	Th	
8	F	
9	S	
10	S	3rd Sunday in Lent.
11	M	
12	Tu	
13	W	Second and Final Vict. Univ. M.B. Exams.
14	Th	
15	F	
16	S	
17	S	4th Sunday in Lent.
18	M	College Examination.
19	Tu	College Examination.
20	W	College Examination.
21	Th	College Examination.
22	F	College Examination. Evening Classes end.
23	S	End of the Lent Term.
24	S	5th Sunday in Lent.
25	M	
26	Tu	Vict. Univ. Exam. results.
27	W	
28	Th	
29	F	
30	S	Winter Session of Medical School ends.
31	S	Palm Sunday.

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APRIL, 1901

DATE		NOTICES, ETC.
1	M	
2	Tu	
3	W	
4	Th	
5	F	Good Friday.
6	S	
7	S	Easter Sunday.
8	M	
9	Tu	
10	W	
11	Th	
12	F	
13	S	
14	S	1st Sunday after Easter.
15	M	
16	Tu	
17	W	
18	Th	
19	F	
20	S	Registration of Students.
21	S	2nd Sunday after Easter.
22	M	Summer Term commences. Evening Classes
23	Tu	commence.
24	W	
25	Th	
26	F	
27	S	
28	S	3rd Sunday after Easter.
29	M	
30	Tu	

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MAY, 1901

DATE		NOTICES, ETC.
1	W	Summer Session of Medical School commences.
2	Th	
3	F	
4	S	
5	S	4th Sunday after Easter.
6	M	
7	Tu	
8	W	
9	Th	
10	F	
11	S	
12	S	5th Sunday after Easter.
13	M	College Scholarship Examination.
14	Tu	College Scholarship Examination. **Last day for payment of Fees for Vict. Univ. June Exams.**
15	W	College Scholarship Examination.
16	Th	College Scholarship Examination.
17	F	College Scholarship Examination.
18	S	College Scholarship Examination.
19	S	6th Sunday after Easter.
20	M	
21	Tu	
22	W	
23	Th	
24	F	
25	S	
26	S	Whit Sunday.
27	M	Whit Monday. College closed.
28	Tu	
29	W	Last day for presenting Certificates of Attendance
30	Th	for the Intermediate and Final Examinations and
31	F	First M.B.

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JUNE, 1901

DATE		NOTICES, ETC.
1	S*	Last day for giving notice to Vict. Univ. and paying Fees for Ch.M. Last day for entry for [Vict. Univ. Fellowships.
2	S	Trinity Sunday.
3	M	
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	S	1st Sunday after Trinity.
10	M	Vict. Univ. Honours, M.A., M.Sc., First M.B.,
11	Tu	Int. and Final Exams. (Arts, Science and Law).
12	W	
13	Th	Vict. Univ. Prel. Exam begins.
14	F	
15	S	
16	S	2nd Sunday after Trinity.
17	M	
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	S	3rd Sunday after Trinity.
24	M	
25	Tu	
26	W	
27	Th	Vict. Univ. June Exams. results.
28	F	
29	S	Last day for payment of Fees for July Exams. Evening Classes end. End of the Summer Term.
30	S	4th Sunday after Trinity. [Degree Day.

* Last day for presenting Certificates of Attendance for Vict. Univ. Preliminary and Honours.

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JULY, 1901

DATE		NOTICES, ETC.
1	M	
2	Tu	
3	W	
4	Th	Last day for presenting Certificates of Attendance
5	F	for Vict. Univ. Second and Final M.B. and
6	S	Ch.M.
7	S	5th Sunday after Trinity.
8	M	Last day for presenting Certificates of Attendance
9	Tu	for Vict. Univ. D.P.H. and Teachers' Diploma.
10	W	Vict. Univ. Second and Final M.B. Exams.
11	Th	
12	F	
13	S	
14	S	6th Sunday after Trinity.
15	M	Vict. Univ. Exams. for Teachers' Diploma,
16	Tu	Diplomas in Public Health, and Sanitary
17	W	Inspection Certificate.
18	Th	
19	F	
20	S	
21	S	7th Sunday after Trinity.
22	M	
23	Tu	
24	W	
25	Th	Vict. Univ. July Exams. results.
26	F	
27	S	Summer Session of Medical School ends.
28	S	8th Sunday after Trinity.
29	M	
30	Tu	
31	W	

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AUGUST, 1901

DATE		NOTICES, ETC.
1	Th	
2	F	
3	S	
4	S	9th Sunday after Trinity.
5	M	Bank Holiday.
6	Tu	
7	W	
8	Th	
9	F	
10	S	
11	S	10th Sunday after Trinity.
12	M	
13	Tu	
14	W	
15	Th	
16	F	
17	S	
18	S	11th Sunday after Trinity.
19	M	
20	Tu	
21	W	
22	Th	
23	F	
24	S	
25	S	12th Sunday after Trinity.
26	M	
27	Tu	
28	W	
29	Th	
30	F	
31	S	

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CHARTER AND STATUTES

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CHARTER

(Dated October 18, 1882)

VICTORIA, by the Grace of God of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith.

To all to whom these presents shall come Greeting.

Whereas our right trusty and right well-beloved Cousin and Councillor EDWARD HENRY, EARL OF DERBY, and others, lately presented to Us in our Council a Humble Petition, representing to us divers steps taken in the City of Liverpool for the Establishment of a College there to provide such instruction in all the branches of a liberal education as would enable residents in the City and the neighbourhood thereof to qualify for Degrees in Arts, Science, and other subjects at any of the Universities granting degrees to non-resident Students, and at the same time to give such technical instruction as would be of immediate service in professional and commercial life, and representing to Us that subscriptions to the intended College had been promised to a large amount, and that the Petitioners were among the subscribers to and promoters of the intended College,

Whereupon the Petitioners most humbly prayed that We might be graciously pleased to grant a Charter of Incorporation for the intended College by the name of UNIVERSITY COLLEGE, LIVERPOOL, or by such other name, and with such advantages and subject to such conditions as to Us in our Council might seem fit.

Now Know Ye, That We having taken into Our Royal consideration in Our Council the said Humble Petition, Do by Our Prerogative Royal and of Our Special Grace certain Knowledge and mere motion by these presents, for Us, Our Heirs and Successors, will and ordain as follows :—

I. Foundation of University College, Liverpool

There shall be and there is hereby constituted and founded a College in the City of Liverpool, with the name of University College, Liverpool, by which name the President,

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Vice-Presidents, Governors, and other Officers of the College for the time being shall be and are hereby constituted and incorporated into one body politic and corporate, with perpetual succession, and a Common Seal, and with power without any further License in mortmain, to take, purchase, and hold, and also to grant, demise, or otherwise dispose of real and personal property, which College shall have the Constitution and powers, and be subject to the regulations in this Our Charter prescribed and contained (and which College is in this our Charter referred to as the College).

The object of the College shall be to provide such instruction in all the branches of a liberal education as may enable residents in the City of Liverpool and the neighbourhood thereof to qualify for Degrees in Arts, Science, and other subjects at any of the Universities granting degrees to non-resident Students, and at the same time to give such technical instruction as may be of immediate service in professional and commercial life.

Female Students may be admitted to attend any of the Courses of Instruction established in the College, subject to such restrictions and regulations as Statutes of the College from time to time prescribe.

It is a fundamental condition of the constitution of the College that no Student, Professor, Teacher, or other Officer or person connected with the College shall be required to make any declaration as to his religious opinions, or submit to any test whatsoever thereof; and that no gift or endowment for theological or religious purposes, or having any theological condition attached thereto, shall be accepted on behalf of the College.

II. Authorities of the College

The authorities of the College shall be the President of the College, the Vice-Presidents of the College, the Court of Governors of the College, the Council of the College, the Treasurer of the College, and the Senate of the College.

III. The President

The President shall be the Head and Chief Officer of the College.

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Our right trusty and right well-beloved Cousin and Councillor Edward Henry, Earl of Derby, shall be the first President.

He shall hold office for ten years from the date of this Our Charter, or until his previous death or resignation.

His successors from time to time shall be elected by the Court of Governors of the College, and shall severally hold office for ten years from the date of election, or until their respective previous death or resignation.

The first and any succeeding President going out of office shall be eligible to fill the vacancy.

The President shall, if present, preside at Meetings of the Court of Governors, and at the opening and closing of the College Session.

In the absence of the President, the function of so presiding shall be discharged by one of the Vice-Presidents.

The President shall have power to consider, and if he think fit, suspend and refer back to the Court of Governors any Statute passed by the Court against which the Council or Senate appeal to him.

In the absence of the President from Our United Kingdom, or in case of his inability to act through illness, the function of so suspending and referring back a Statute shall be discharged by one of the Vice-Presidents.

IV. The Vice-Presidents

There shall be two Vice-Presidents.

Our trusty and well-beloved Christopher Bushell, Esquire, and Our trusty and well-beloved William Rathbone, Esquire, a Member of the Commons House of Parliament, shall be the first Vice-Presidents.

They shall respectively hold office for five years from the date of this Our Charter, or until their respective previous death or resignation.

Their respective successors from time to time shall be elected by the Court of Governors, and shall severally hold office for five years from the date of election, or until their respective previous death or resignation.

Each of the first Vice-Presidents, and any succeeding Vice-President, going out of office, shall be eligible to fill the vacancy.

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V. The Court of Governors

The Court of Governors shall consist of the President and Vice-Presidents and of other Governors of the College named or designated in this Our Charter, or chosen or appointed as in this Our Charter prescribed.

The following persons shall be Governors until their respective death or resignation (that is to say) :—

The Right Honourable Edward Henry, Earl of Derby.

Alexander Hargreaves Brown, of Druid's Cross, near Liverpool, in the County of Lancaster, Esquire, M.P.

William Rathbone, of Greenbank, near Liverpool aforesaid, Esquire, M.P.

Edward Whitley, of Clovelly, Anfield, near Liverpool aforesaid, Esquire, M.P.

James Wilcox Alsop, of the City of Liverpool, Gentleman.

The Reverend Charles Beard, of the said City, Minister of Religion.

Anthony Bower, of Seaforth, near Liverpool aforesaid, Iron Founder.

James Campbell Brown, of the City of Liverpool, Esquire, Doctor of Science.

Christopher Bushell, of Hinderton, near Neston, in the County of Chester, Esquire.

Reginald Bushell, of Oakhill, Neston aforesaid, Wine Merchant.

The Reverend George Butler, of the said City of Liverpool, Clerk.

Richard Caton, of the said City, Esquire, Doctor of Medicine.

Thomas Cope, of Huyton, in the County of Lancaster, Esquire.

William Crosfield, of the said City of Liverpool, Esquire.

Arthur Bower Forwood, of the Priory, Gateacre, near Liverpool aforesaid, Esquire.

Malcolm Guthrie, of the said City, Silk Mercer.

Robert Gladstone, of Woolton, near Liverpool aforesaid, Esquire.

Frederick James Harrison, of Wallasey, in the County of Chester, Shipowner.

Reginald Harrison, of the said City of Liverpool, Esquire, Fellow of Our Royal College of Surgeons.

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The Reverend Henry Hugh Higgins, of Rainhill, in the County of Lancaster, Clerk.
The Reverend Henry Isaac Johnson, of the said City of Liverpool, Clerk.
Francis Johnston, of Egremont, in the County of Chester, Shipowner.
Edward Lawrence, of Barkhill Road, Aigburth, near Liverpool aforesaid, Esquire.
John McDiarmid, of the said City of Liverpool, Merchant.
Edmund Knowles Muspratt, of Seaforth, near Liverpool aforesaid, Esquire.
James Allanson Picton, of Wavertree, near Liverpool aforesaid, Esquire.
David Radcliffe, of the said City of Liverpool, Brass Founder.
Philip Henry Rathbone, of Greenbank Cottage, near Liverpool aforesaid, Esquire.
Samuel Greg Rathbone, of Woolton aforesaid, Esquire.
The Reverend John Sephton, of the said City of Liverpool, Clerk.
John Hope Simpson, of the said City, Sub-Manager of the Bank of Liverpool.
Samuel Smith, of the said City, Merchant.
Andrew Tucker Squarey, of Higher Bebington, in the County of Chester, Gentleman.
William John Stewart, of the said City of Liverpool, Esquire, Barrister-at-Law.
Sir William Thomson, of the City of Glasgow, Professor of Natural Philosophy in the University of Glasgow.
Alderman Thomas Houghton Waters, of the said City of Liverpool, Esquire, Doctor of Medicine.

Every individual at any time contributing to the College a donation of £1,000 or upwards, whether contributed in one sum or by instalments, shall be a Governor until his death or resignation.

Every Corporate Body and every Association at any time contributing to the College a donation of £1,000 or upwards, whether contributed in one sum or by instalments, shall be entitled on one occasion to nominate a person to be a Governor until his death or resignation.

Every Partnership-firm at any time contributing to the

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College a donation of £1,000 or upwards, whether contributed in one sum or by instalments, shall be entitled on one occasion to nominate one of the partners to be a Governor until his death or resignation.

The Executors or Administrators of every testator or intestate at any time contributing out of the testator's or intestate's estate to the College a donation of £1,000 or upwards, whether contributed in one sum or by instalments, shall be entitled on one occasion to nominate a person to be a Governor until his death or resignation.

All Individuals, Corporate Bodies, Associations, Partnership-firms, and Executors or Administrators, contributing to the College donations severally of less than £1,000 and of not less than £25, whether contributed in one sum or by instalments, and in the aggregate amounting to £5,000, shall form an electoral body, and shall have power on one occasion to elect a person to be Governor until his death or previous resignation.

Persons from time to time chosen as follows shall be Governors of the College, namely :—

Five by the Council of the City of Liverpool.
One by the Council of the City of Chester.
One by the Council of the Borough of Birkenhead.
One by the Council of the Borough of Bootle.
One by the Council of the Borough of St. Helens.
One by the Council of the Borough of Southport.
One by the Council of the Borough of Warrington.
One by the Council of the Borough of Wigan.

One by any such other Town or District in Lancashire or Cheshire as Statutes of the College from time to time prescribe.

The persons so chosen shall severally hold office for five years from the date of their being respectively chosen, or until their respective previous death or resignation.

One person from time to time appointed by the Lord President of Our Council shall be a Governor of the College for five years from the date of his appointment, or until his previous death or resignation.

One person from time to time appointed by the Chancellor of each of the following Universities, namely :—Oxford,

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Cambridge, London, Durham, and Victoria, shall be a Governor of the College for five years from the date of his appointment, or until his previous death or resignation.

Any Governor holding office for five years may on going out of office be chosen or appointed to fill the vacancy.

Each of the following officers or persons shall by virtue of his office hereinafter mentioned be a Governor of the College while he holds the office hereinafter mentioned, or until his previous resignation of the office of Governor, namely:—

The Mayor of Liverpool.

The Recorder of Liverpool.

The Head Master of the Liverpool Royal Institution, of the Liverpool Institute, of the Liverpool College, of the Birkenhead School, and of any such other School as Statutes of the College from time to time prescribe.

The Registrar of the Liverpool Royal Infirmary School of Medicine.

The Chairman of the Liverpool Royal Infirmary, of the Liverpool Royal Infirmary School of Medicine, of the Mersey Docks and Harbour Board, of the Liverpool School Board, and of the Liverpool Council of Education.

The President of the Incorporated Law Society of Liverpool, and the President or Chairman of any such other Institution or Public Body as Statutes of the College from time to time prescribe.

The Principal of the College and two Professors of the College, other than the Principal, from time to time chosen by the Senate of the College, shall be Governors of the College.

Five persons from time to time chosen by the Court of Governors from among the representatives in the Commons House of Parliament of the Counties and Boroughs of Lancashire and Cheshire shall be Governors of the College until their severally ceasing to be such representatives or their respective previous resignation of the Governorship.

When by death or resignation the number of Life Governors falls below forty, the Court shall, with all reasonable speed, elect a sufficient number of fit persons to make up the full number of forty, to be Governors until their respective death or resignation.

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Not more than five members of the Senate shall at any one time be Members of the Court ; but that number shall be exclusive of any persons named as Life Governors in this Our Charter who are or become Members of the Senate.

Any proceedings of the Court shall not be invalid by reason only of any Governor not having been chosen or appointed, and notwithstanding any vacancy, as long as the number of Governors is not reduced below forty.

Statutes of the College shall prescribe the mode in which Governors are to be chosen or appointed in the several cases aforesaid.

The Court of Governors shall be the governing body of the College.

VI. The Council

The Council shall consist of the persons following, namely : First—the President. Secondly—the Vice-Presidents. Thirdly—the Treasurer. Fourthly—the Principal. Fifthly—the two Professors chosen to be Governors by the Senate. Sixthly—the following elected persons and their successors elected as in this Our Charter provided, namely : Our trusty and well-beloved Edward Lawrence, Esquire ; Our trusty and well-beloved Samuel Greg Rathbone, Esquire ; Our trusty and well-beloved William Crosfield Esquire ; Our trusty and well-beloved Arthur Bower Forwood, Esquire ; Our trusty and well-beloved Samuel Smith, Esquire ; Our trusty and well-beloved James Allanson Picton, Esquire ; Our trusty and well-beloved Andrew Tucker Squarey, Esquire ; Our trusty and well-beloved Reginald Harrison, Esquire ; Our trusty and well-beloved the Reverend George Butler ; Our trusty and well-beloved the Reverend Charles Beard ; and Our trusty and well-beloved Thomas Cope, Esquire.

Of those eleven persons four shall hold office for one year, four others for two years, and the remaining three for three years from the date of this Our Charter, or until their respective previous death or resignation.

The successors from time to time of those eleven persons shall be elected by the Court of Governors.

Statutes of the College shall prescribe the order of rotation among those eleven persons, and the mode in which

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vacancies among them occurring by rotation, and in which vacancies among them and their successors caused by death, resignation, or otherwise, shall be filled.

Subject and according to the Statutes of the College,

The Council shall :—

(1) Manage the financial and ordinary business of the College.

(2) Keep the records of and see to the due maintenance of the lists of the members of the Council, and the registers of Students.

(3) Direct the affixing of the College Seal.

(4) Appoint and, if necessary, remove the Principal, Professors, and Lecturers, and make contracts with them.

(5) Appoint, pay, and remove the Registrar and other Officers and Servants of the College.

(6) Appoint from time to time the fees to be paid by Students.

(7) Expel offending Students.

(8) Discharge such other functions and have such other powers as Statutes of the College from time to time prescribe.

Subject and according to Statutes of the College, the Council of the College may by agreement with the Liverpool Royal Infirmary School of Medicine, or with any other body, or with any person, from time to time, make appointments to Professorships or Lectureships in the College jointly with that School of Medicine, or body or person.

VII. The Treasurer

The Treasurer shall discharge such functions as Statutes of the College prescribe.

Our trusty and well-beloved Robert Gladstone, Esquire, shall be the first Treasurer.

He shall hold office for one year from the date of this Our Charter, or until his previous death or resignation.

His successors from time to time shall be elected by the Court of Governors from among the Governors, and shall severally hold office for one year from the date of Election, or until their respective previous death or resignation.

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The first and any succeeding Treasurer going out of office may be elected to fill the vacancy.

The receipt of the Treasurer shall be a sufficient discharge for any money or property payable or deliverable to the College.

If the office of Treasurer becomes vacant by death, resignation, or any other cause before the expiration of his year of office, the Council shall forthwith elect a Treasurer for the remainder of the year.

VIII. The Senate

The Principal and Professors for the time being shall form the Senate of the College.

Subject to Statutes of the College, the Senate shall regulate the education and discipline of the College, and in particular :—

(1) Fix the hours of the Classes and arrange the subjects of instruction and examination, and frame regulations for the conduct of classes and examinations.

(2) Fix, subject to Founders' regulations (if any), times and mode and conditions of competition for Scholarships and Prizes.

(3) Regulate the admission of Students, and keep and furnish to the Registrar class lists.

(4) Suspend any offending Student.

(5) Appoint and dismiss any assistant or occasional Lecturer or Demonstrator or other assistant.

Subject and according to Statutes of the College, any Professor aggrieved by any act of the Senate may appeal to the Council.

IX. Medical Department of the College

The College may co-operate with the Liverpool Royal Infirmary School of Medicine (in this Our Charter referred to as the School of Medicine) on the terms following (that is to say) :—

(1) The School of Medicine, while retaining its present name and constitution, and separate government and management, may act as the Medical Faculty of the College.

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(2) The School of Medicine may (notwithstanding anything in the foregoing provisions of this Our Charter) be represented on the Senate of the College by four Members of the Council of the School of Medicine chosen by that Council, and holding office for such time as to that Council from time to time seems fit, and being designated Professors of the College.

(3) The number of those representatives may be increased or reduced from time to time by the Court of Governors of the College.

(4) Students of the School of Medicine attending Classes in the College shall, in that respect, be subject to the discipline of the College.

Any part of the foregoing terms may be from time to time altered by agreement between the College and the School of Medicine.

X. Statutes of the College

The Court of Governors shall have power to make statutes for the regulation of the proceedings of the Court of Governors, and of the Council, and of the Senate, and of their respective Committees, and the appointment of a Chairman and a Vice-Chairman of the Council, and for fixing the least number of Members requisite to be present at a Meeting of the Council and of the Senate, and for regulating all matters connected with the government and administration of the College, those statutes not being repugnant to the law of England or contrary to the objects or provisions of this Our Charter.

Statutes from time to time made by the Court of Governors are in this Our Charter referred to as Statutes of the College.

XI. Deed of Settlement

Within one year from the date of this Our Charter there shall be executed by the College, and by all other necessary or proper parties, a Deed of Settlement providing for :—

(A) The disposition of contributions given to the College, distinguishing those given for the special purposes of founding particular Professorships or other special purposes.

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(B) The merging, if thought expedient, of all or any subscriptions specially appropriated into one fund under the designation of the Amalgamated Endowment Fund, or other designation, and the application of a proportionate part of the Income of that Fund to the several emoluments connected with such particular Professorships as aforesaid.

(C) In cases of the increase or diminution from time to time of that Fund, the allocation of a correspondingly increased or diminished proportion of emolument to the several Professorships.

(D) The formation of a General Purposes Fund, applicable both as regards capital and as regards income, to the general purposes of the College, including the purchase, erection, adaptation or renting of a building, the purchase of furniture, books, and apparatus, the payments of a Principal and of any Professors or Lecturers whose emoluments are not provided for out of the Amalgamated Endowment Fund or otherwise, and to the discharge of all incidental expenses.

(E) The Investment of moneys of the College.

(F) Any other matters of a financial or other kind necessary or proper to be provided for.

The Deed of Settlement shall, before the execution thereof, be submitted to and approved by the Lords of Our Council, and a Certificate of their approval thereof, signed by the Clerk of Our Council, shall be endorsed on this Our Charter and on the Deed of Settlement.

The provisions of the Deed of Settlement may be from time to time varied or added to by a Supplementary Deed made and executed in such manner and subject to such conditions as the Deed of Settlement prescribes.

XII. Real Property

Notwithstanding anything in this Our Charter, the College shall not at any time hold real property in Our United Kingdom exceeding the annual value of Ten Thousand Pounds ascertained at the time of the acquisition thereof over and above the value of the site, buildings and hereditaments

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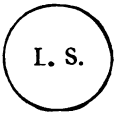
of the College used and occupied for the immediate purposes thereof.

In Witness whereof we have caused these Our Letters to be made patent.

Witness Ourself, at Our Palace at Westminster, the Eighteenth day of October, in the Forty-fifth year of Our Reign.

By Her Majesty's Command,



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STATUTES

Governors

1. An Alphabetical Register of Governors shall be kept, distinguishing between Governors elected for life, Governors appointed for a shorter period, and Governors *ex officio*. In this register the following particulars shall be entered :—

(i) The name, address and occupation, if any, of each Governor and his qualification for Governor.

(ii) The date at which he became a Governor.

(iii) The date at which he ceased to be a Governor.

2. Whenever by death or resignation the number of Life Governors falls below 40, and whenever a vacancy occurs among Governors nominated in virtue of their being Members of Parliament, the vacancies shall be filled up at the next Ordinary Meeting of the Court. The Registrar shall send notice of each vacancy to every Member of the Court at least twenty-one days before the Meeting, and no vacancy shall be filled up at any Meeting prior to which such notice shall not have been given. Members of the Court wishing to propose a person for appointment as a Life Governor shall send to the Registrar at least fourteen days before the Meeting a memorandum proposing such Member, signed by two or more Members, and containing the name and address of the person so proposed. The Registrar shall, seven days before the Meeting, send to every member of the Court a statement of every vacancy to be filled up, together with the name of every person proposed, and the names of the proposers; and no person shall be appointed a Life Governor whose name shall not have been sent to the Registrar, and by him notified to every Member of the Court in the manner hereinbefore provided. The election shall be by ballot.

3. As soon as the term of office of a Governor nominated for a shorter period than life has expired by lapse of time, and in case of the resignation, disqualification, or death of any such Governor before the expiration of his term of office,

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the Registrar shall give notice to every person having the right of nominating to the Governorship so vacant.

4. As soon as the donations of not less than £25 and less than £1,000 shall have amounted in the aggregate to the sum of £5,000, or any multiple thereof, the Registrar shall appoint a day, of which not less than fourteen days' notice shall be given to every Donor whose donation is included in such aggregate, for the election by the said Donors of a Governor or Governors. Each Donor shall be entitled to nominate in writing, to be sent to the Registrar not later than seven days before the day of election, any person or persons as a candidate or candidates for such post or posts. The Registrar shall send a list of such names to the Donors before the meeting. The voting shall be by ballot. No Donor, whether Individual, Corporate Body, Association or Partnership-firm, Executor or Administrator, shall have more than one vote, and no Donor, whether Individual, Corporate Body, Association or Partnership-firm, Executor or Administrator, who has been once summoned to take part in such election, shall be summoned again, or shall have any future power to take part in any other election of Governors under clause seven, section five of the Charter, in virtue of the same donation.

5. On every election of a Governor by the Members of the Court, a paper of appointment, and on every nomination of a Governor, the original paper of nomination, and on every change among *ex officio* Governors, a notification in writing from the body appointing him, shall be countersigned by the President or one of the Vice-Presidents or Treasurer, and shall be preserved by the Registrar in a Book called 'The Governors' Qualification Book.' Every new Governor shall, as soon as may be, sign his paper of appointment, to signify his acceptance and to record his address.

The President

6. The election to the office of President shall take place at the next ordinary meeting of the Court after the office has become vacant, or at a meeting to be called for the purpose, and the requirements as to the previous proposal of candidates, and the due notification to the Members of the Court of the persons proposed, shall be as nearly as may be the same as

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those prescribed for the election of a Life Governor. *Vid. sup.* § 2.

The Vice-Presidents

7. The regulations prescribed in § 6 and § 2 for the election of a President shall apply to the election of a Vice-President.

The Treasurer

8. The Treasurer shall be elected from amongst the Governors at the Autumn Meeting of the Court. Governors wishing to propose a Governor (other than the retiring Treasurer) for election as Treasurer, shall send to the Registrar, at least fourteen days before the meeting of the Court at which the election is to take place, a memorandum to that effect, signed by two or more Governors. The retiring Treasurer may be re-elected without notice.

9. The functions of the Treasurer shall be under the direction of the Council :—

(i) To take charge of the College property, funds, investments, and expenditure, and to keep proper books of account, and present to the Council periodical accounts and reports as they may arrange.

(ii) To keep and affix the College Seal.

(iii) To provide and maintain proper registers and custody for the College muniments and securities.

10. At the first Meeting of the Council after the Autumn Meeting of the Court, the Council shall elect one of their number to be the Treasurer's Deputy. In the absence of the Treasurer, duly notified by him to the Deputy or the Registrar, the Deputy shall, except in so far as is otherwise provided, perform the duties and exercise the authority of the Treasurer.

The Court

11. The Court of Governors shall meet at least twice a year, at fixed times, namely, once between 15th September and 15th October, and once between 15th April and 15th May, and at other times when convened by the President or Council. The two Ordinary Meetings of the Court shall

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take place in each year on such days as shall be fixed by the Court.

12. Twenty-one days' notice of Ordinary Meetings, and fourteen days' notice of any Meeting specially convened shall be sent by the Registrar to every Member of the Court. Members intending to bring forward any business at an Ordinary Meeting of the Court shall give notice of such business to the Registrar at least fourteen days before the day appointed for such Meeting.

13. The quorum necessary to constitute a Meeting of the Court shall be fourteen, and no resolution for the election of President, Vice-President, Treasurer, or Members of the Council, or for the removal of the Principal or any Professor, or for making or altering any Statutes, shall be carried unless at least two-thirds of that number vote in its favour; other questions may be decided by majority. The Chairman of the Meeting may vote and have a second or casting vote. If the President and Vice-President be absent, the Members of the Court present being a quorum shall appoint a Chairman for the Meeting. At least seven days' notice of all business to be brought forward shall be sent to every Member of the Court, and no Meeting shall be competent to transact any other business than such as shall directly arise out of the business so brought forward, or such business as shall have arisen since the time of the summons for the Meeting, and which shall yet, for the satisfactory working of the College, require immediate determination.

14. At every Meeting of the Court each Member shall sign his name in an Attendance Book to be kept and presented for the purpose by the Registrar. At the conclusion of each Meeting the Chairman shall close the entry for the day with his signature.

15. The Minutes of the Council and Senate shall be laid before all Ordinary Meetings of the Court, and such parts shall be read *in extenso* as the Council or Senate shall have directed or any Governor may require, the marginal notes of the remainder being read.

16. The words of every motion or amendment on a motion shall, before any resolution or any division thereon is taken, be handed to the Chairman in writing.

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17. Any Meeting of the Court may be adjourned.

18. The Court at each Spring Meeting shall appoint a Public Accountant to audit the Accounts of the College for the current year.

The Council

19. The Members of the Council, other than the President, Vice-Presidents, Principal and Treasurer, shall hold office for three years only from the date of appointment, and not less than three of such Members shall retire every year. Their successors (except as regards the representatives of the Senate, whose successors shall be elected by that body) shall be elected by the Court by ballot; but only two of the retiring Members shall be eligible for re-election. Any casual vacancies may be filled by the Council, the Member so elected retiring at the date on which the Member whose place he is elected to fill would have retired.

20. Twenty-one days at least before the expiration of the term of office of any of the Members of the Council, the Registrar shall give notice thereof to the Members of the Court or to the Senate, as the case may be; and the requirements in regard to the previous proposal of persons as Candidates, and the due notification of the persons proposed, shall be as nearly as may be the same as those prescribed for the election of Life Governors. *Vid. sup.* § 2.

21. The election shall be by ballot.

22. The election of Professors to the Council shall take place at an Ordinary Monthly Meeting of the Senate.

23. Ordinary Meetings of the Council shall be held on such days and at such time and place as the Council may from time to time determine; but one such Meeting at least shall be held in each month during the College Session.

24. Three clear days' notice of all Ordinary Meetings, and, unless otherwise provided by Statute, of all business to be brought forward, shall be sent by the Registrar to every Member of the Council; and no Meeting shall be competent to transact any other business than such as shall directly arise out of the business so brought forward, or such business as shall have arisen since the issue of the summons for the

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Meeting, and which shall yet, for the satisfactory working of the College, require immediate determination.

25. The Council shall elect a Chairman and Vice-Chairman of the Meetings, who shall hold office for one year, and may be re-elected; in the absence of the Chairman and Vice-Chairman, the Members of the Council present being a quorum shall choose some one of their number to be Chairman of such Meeting.

26. At the request of the Chairman, a Special Meeting shall be called at any time by the Registrar, who shall send out a notice convening the same and specifying the business to be brought forward thereat, as at an Ordinary Meeting of the Council.

27. Whenever requested by the President, Treasurer, Principal, or any three Members of the Council, the Chairman shall appoint a day for a Special Meeting, and shall notify the same to the Registrar, who shall send out a notice convening the same, and specifying the business to be brought forward thereat, as at an Ordinary Meeting of the Council.

27A. Not less than three days' notice of Special Meetings shall be given; and no business shall be considered at such Special Meetings other than that contained in the notice calling such Meeting.

28. At Meetings of the Council, five Members shall be a quorum.

Except in cases otherwise provided for, the votes of the majority of the Members present shall decide all questions.

The Chairman of the Meeting may vote and have a second or casting vote.

29. The Minutes of the proceedings of the Council shall be laid before the Court at its next Ordinary Meeting.

30. The Council shall cause a summary of the Audited Accounts of the Treasurer, showing the Income and Expenditure for the year ending the previous 31st July, together with a statement of the Capital and investments of the College, to be presented to the Court at each Autumn Meeting.

31. The Council shall present to the Court at each Autumn Meeting a printed report of the affairs of the College, with a table showing the number of Meetings of the Council

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and all its Committees, and the attendance of each Governor thereat. A copy of such report shall be sent to each Member of the Court before the Meeting. The Council may present a special Report to any Meeting of the Court without printing and circulating the same.

32. The Council, before proceeding to the election of a Professor, shall in ordinary cases advertise for or receive candidates' applications and testimonials, and shall refer the same to the Senate for examination, arrangement, and report; but the Council shall not be obliged to adopt the Report, nor be bound by the recommendation of the Senate. In special cases, and after having applied to the Senate for information, the Council may appoint to a Professorship or to an independent Lectureship without advertisement.

33. The Council shall have power to refer back to the Senate or to suspend, if it think fit, any rule or resolution passed by the Senate until the pleasure of the Court respecting the same may have been ascertained.

34. The Council shall discharge such other functions as the Court may from time to time commit to it.

The Senate

35. The Senate shall meet at least once in each month during the College Session.

36. The Principal shall convene a Meeting of the Senate within twenty-one days after the first day of each Session. At this Meeting the Senate shall elect one of their number to be the Principal's Deputy for the ensuing Session, and the time and place of the Ordinary Monthly Meetings of the Senate for the Session shall be fixed. Special Meetings of the Senate shall, when necessary, be convened by the Registrar, under the direction of the Council, or by the Principal, either at his own instance, or on the written requisition of three Professors, and in the latter case the Meeting shall be held within three days from the receipt of such requisition.

37. Three days' notice of all Ordinary Monthly Meetings of the Senate, specifying the business to be brought forward at the Meeting, shall be sent by the Registrar to every Member of the Senate. Not less than one day's notice of

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Special Meetings shall be given ; and no business shall be considered at such Special Meetings other than that contained in the notice calling the Meeting.

38. Professors shall give notice in writing to the Principal of any business which they desire to lay before the Senate.

39. One-third of the total number of the Senate shall be a quorum, unless the total number of the Senate exceed twenty-one, when seven Members shall form a quorum, and a majority of those present shall decide all questions, except in any case where by a Statute a specific majority is required. Provided that the Council may, with the approval of the Senate, appoint the number and qualification of a quorum of particular sections of the College, which shall be competent to act in the name of the Senate in such matters concerning those particular sections as may be entrusted to them.

40. At the first Meeting of every Session a table showing the number of Meetings of the Senate during the preceding Session, and the attendance of each Professor thereat, shall be presented by the Registrar, and entered on the Minutes.

41. The Senate shall be responsible to the Council for the discharge of its duties ; and all resolutions passed, appointments made, and rules framed by the Senate shall be laid before the Council at its next Meeting, and the Council may, at its discretion, refer back to the Senate or suspend any of them until approved by the Court.

42. The two Professors elected by the Senate to represent it upon the Court and Council shall hold office for one year, but shall be eligible for re-election.

43. The Senate may from time to time make suggestions to the Council in regard to the general management of the College.

Record of Proceedings

44. All proceedings of every Meeting of the Court, Council, or Senate, and of every Committee, shall be recorded in minute books, which shall be kept by the Registrar. Every Member of the Court, Council, or Senate shall be entitled, on making written application to the Registrar, to examine the minute books.

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Notices

45. Notices to Members of the Court, Council, or Senate, shall be deemed to be duly given if despatched by post, addressed to such Member at his registered address.

The Principal

46. The Principal shall be the Chairman of the Senate and one of its representatives on the Council. He may convene a Special Meeting of the Senate when he thinks fit. At all Meetings of the Senate the Principal may vote, and have a second or casting vote. It shall be the duty of the Principal to carry out the regulations of the Senate and Council as to the admission of Students. The Principal shall be responsible for maintaining the discipline of the College.

47. The Principal shall present to the Council, at the close of the Session, a report showing the condition of the College in all its parts, and making, if he sees fit, suggestions for its future welfare and development.

Professors and Lecturers

48. Each Professor and Lecturer shall, on his appointment, sign a statement in a 'Book of Professors' and Lecturers' Appointments,' which statement shall indicate :—

(*a*) The subject or subjects committed to the office undertaken.
(*b*) The arrangement as to fixed stipend (if any).
(*c*) The arrangement as to share of fees (if any).
(*d*) Any special terms of the appointment; and
(*e*) Shall include an undertaking to observe the constitution of the College, and the Statutes and Regulations for the time being.

49. Except in cases of exigency, in which special permission shall have been obtained from the Council, a Professor or Lecturer shall not resign his appointment except by three months' notice in writing.

50. Each Professor shall give to the work of his chair, and to its extension and development, and to the general interests of the College, such time and labour as shall be deemed by the

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Council sufficient, and he shall allow no other work or occupation of any kind to interfere with the adequate performance of his duties.

51. No Professor, without the special permission of the Council, shall undertake any teaching except in connection with the College, and subject to the regulations of the Senate and Council.

52. Lecturers and Teachers shall devote the necessary labour and time to the due performance of their duties to the satisfaction of the Senate and Council.

53. Assistant Lecturers, Demonstrators, and other Assistants, may be appointed and dismissed by the Senate, or subject to the approval of the Senate, by the Council or a Professor. They shall devote the necessary time and labour to the performance of their duties to the satisfaction of the Professors assisted by them.

54. The functions of every member of the teaching body shall be subject to the direction of and revision from time to time by the Council, but only after a report on the matter by the Senate, either prepared at the request of the Council, or originating in the Senate.

55. If a member of the teaching body shall be compelled to omit, or shall neglect or refuse to perform any of his duties in the College, the Principal, with the concurrence of the Senate, shall arrange for the temporary discharge of the said duties, and the Council may charge the expense, if any, on the absent or defaulting member.

56. In the first instance, and in all ordinary cases, Professors shall lay matters which they desire to have brought under the notice of the Council before the Senate, who shall, if they deem it advisable, present the matter, with a report thereon from their body. In exceptional cases Professors may communicate with the Council directly, either in writing, addressed to the Chairman, or through the Principal, or one of the other Representatives of the Senate on the Council.

57. Every Professor and Lecturer shall prepare and forward to the Principal, at least fourteen days before the Meeting of the Senate held next before the last day of June, a scheme for the arrangement of his lectures or courses of instruction during the succeeding Session; and every such

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scheme shall be submitted to the Senate for its approval or revision.

58. Any Professor or Lecturer who is compelled to omit a lecture shall send the earliest possible notice thereof, in writing, to the Principal.

59. Every Professor and Lecturer shall keep a register of the attendance at the lectures and examinations of his courses, in a form to be approved by the Senate.

60. The Council shall not remove any Principal, Professor, or Lecturer from his office, without previously sending to the Senate a written statement of the grounds on which his removal is proposed, and requesting the opinion of the Senate thereon. The Council shall at the same time send a copy of such written statement to the Principal, Professor, or Lecturer in question. The Senate shall consider the statement, and shall report, in writing, their opinion thereon to the Council within twenty-one days, accompanied by a statement of the number present at the Meeting, and the number of the votes for and against the adoption of the report. A copy of the report shall, as soon as it has been agreed to, be sent by the Registrar to the Principal, Professor, or Lecturer in question. When the Senate have reported to the Council, or when the twenty-one days fixed for making the report have elapsed, the Council may, by a vote of not less than an absolute majority of the Council, proceed to remove the Principal, Professor, or Lecturer in question. The Meeting of the Council held to consider the question of removal shall be convened by a notice of not less than seven days, provided always that the same notice shall be given to such Principal, Professor, or Lecturer, who shall have an opportunity, if he thinks fit, of stating his case in writing, or in person at the meeting of the Council at which his removal shall be under discussion. A copy of such resolution shall be delivered to the Principal, Professor, or Lecturer, as aforesaid. One calendar month shall be allowed to such Principal, Professor, or Lecturer from his receiving a copy of the resolution of the Council, during which he may, in writing, declare to the Council his wish to appeal to the Court of Governors, and every facility for such appeal shall be given by the Council. If he does not so appeal within the period aforesaid, his office shall, according to the terms of the

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resolution, become *ipso facto* vacant; but if he does so appeal, the question of his removal and the conditions thereof shall depend upon the decision of the Court.

Students

61.—Persons seeking admission as Students entering for the regular curriculum of the College must have attained the age of fifteen years, and those who are under the age of sixteen will be required to pass a Preliminary Examination.

Every person seeking admission as a Student entering for the regular curriculum of the College must produce a certificate of good conduct from his or her last instructor, or such testimonial as shall be satisfactory to the Principal.

This rule does not necessarily apply to occasional Students or to those attending only evening classes.

62. Female Students may be admitted to the classes of the College, except those of the Medical Faculty, under regulations to be framed by the Senate and approved by the Council.

63. Each Student shall on admission sign a declaration that he or she will observe the Statutes and Regulations of the College for the time being.

Discipline

64. Every Student shall be subject to such regulations as shall from time to time be passed by the Senate and confirmed by the Council.

65. Any Professor, Lecturer, Demonstrator, or Assistant Lecturer may order an insubordinate Student to withdraw from the lecture-room for the day, and may, if he think fit, report the case to the Principal.

66. The Principal may suspend any Student from attendance on any class or classes, and may exclude any Student from any part of the College or its precincts. He shall report every such suspension or exclusion to the Senate at its next Ordinary or Special Meeting, to be held within seven days, for further adjudication, and the Senate may continue such suspension or exclusion as and for such period (not extending beyond the end of the then current Session) as they may think fit. In grave cases of misconduct the Senate may recommend the Council to exercise their power of expelling a Student.

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67. Each Professor, Lecturer, or other officer shall consider it his duty to report to the Principal any breach of discipline, or any instance of disorderly conduct on the part of any of the Students which may come under his personal observation. Habitual neglect of work in any class, without good reason assigned, shall be regarded as a breach of discipline, and may subject a Student to suspension from the class.

Registrar

68. The duties of Registrar may, in his absence, be performed by a Deputy appointed by the Council, the Treasurer, or the Principal.

69. The Head Master of Merchant Taylors' School, Crosby, shall be *ex officio* a Governor of the College.

70. The Chairman of the Technical Instruction Sub-Committee of the Library, Arts, and Museum Committee of the City of Liverpool shall be *ex officio* a Governor of the College.

71. The Chairman of the Technical Instruction Committee of the County Council of Lancashire shall be *ex officio* a Governor of the College.

Professors Emeriti

72. The Council may, on the recommendation of the Senate, confer the title of 'Professor Emeritus' on any Professor of the College at, or after, his retirement, in recognition of conspicuous services to the College. The title 'Professor Emeritus' shall in no case be conferred unless the connexion with the College shall have extended over a period of not less than ten academic years. The name of the Professor Emeritus shall be inserted in the College Calendar. Professors Emeriti shall for all purposes of courtesy and on ceremonial occasions be upon the same footing as other Members of the Senate, but shall not be entitled to administrative or executive functions as Members of the Senate or otherwise.

73. The President for the time being of the Incorporated Chamber of Commerce of Liverpool shall be *ex officio* a Governor of the College.

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SUPPLEMENTAL CHARTER

(Dated January 22, 1900)

VICTORIA, by the Grace of God of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith.

To all to whom these presents shall come Greeting.

Whereas by Our Letters Patent, bearing date at Our Palace of Westminster the 18th day of October, in the 45th year of Our Reign, We did constitute, found and incorporate a College in the City of Liverpool, in the County of Lancaster, with and by the name of University College, Liverpool, and further made provision with regard to the said College its constitution, Government and affairs as more at large appears in Our said Letters Patent. And whereas University College, Liverpool, did lately present unto Us in Our Council their humble Petition dated the seventeenth day of October, 1899, under the Common Seal of the said College, representing to Us that it was expedient and praying Us that We would be graciously pleased to grant to the said College a Supplemental Charter, to the effect and for the purposes hereinafter appearing and set forth and amending or altering our said recited Letters Patent accordingly. Now know Ye that We, having taken into consideration the said humble Petition, do by virtue of Our Prerogative Royal and of every other power enabling Us in that behalf and of Our special grace certain knowledge and mere motion, by and with the advice of Our Most Honourable Privy Council by these presents for Us, Our heirs and successors, will grant, ordain and direct as follows :—

1. The Court of Governors of University College, Liverpool, shall have power from time to time, and notwithstanding any provision in our said recited Letters Patent inconsistent herewith, to make special statutes making such provision with regard to the constitution of the Court of Governors and Council of the said College and to the Corporate members of University College, Liverpool, and with regard to the election, appointment, numbers, tenure of office, status and removal of

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the members of the said Court and Council, and with regard to the appointment, election, continuance in office, removal, status and privileges of the said Corporate members as to the said Court shall seem meet.

Special statutes may also be made from time to time enabling the said College, subject to and in accordance with the provisions of such special statutes, to join with any one or more public or private body, authority, or association having in view or promoting educational purposes, or any purpose the same as or similar to any purpose of the said College, or to appoint one or more representatives of the said College to act upon any such body, authority, or association, as aforesaid, for such purposes as may be agreed with such body, authority, or association, or as may be provided for or permitted by law.

A special statute means a statute made and passed at one meeting of the Court of Governors and confirmed at another meeting of the said Court, held not less than one calendar month nor more than six calendar months after the former meeting, and allowed by the President of our Privy Council with such amendments (if any) as the said Council may require, and be accepted at a meeting of the said Court of Governors held previous to such an allowance.

A special statute may alter, repeal, add to, or amend any prior special statute (including the scheduled special statutes).

Special statutes may also make such provision with regard to the powers of the Court of Governors and the Council respectively as are not inconsistent with these presents and Our said Letters Patent, as by these presents repealed, altered, or amended, nor repugnant to the laws of the realm.

The special statutes scheduled to these presents shall be deemed to be special statutes made pursuant to the powers conferred by these presents, and shall come into force as soon as these presents become binding.

2. Our will and pleasure is that these presents shall repeal, alter or amend (as the case may require) Our said recited Letters Patent and that Our said Letters Patent as repealed, altered, or amended as aforesaid, and these presents shall be construed and have effect as one instrument.

3. The Court of Governors shall have power (in addition to and not in derogation of any power conferred by our said

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Letters Patent) to, from time to time, make such statutes for the government or regulation of any of the affairs, business, or concerns of University College, Liverpool, or its members, as are not repugnant to Our Letters Patent (as repealed, altered, or amended as aforesaid) or these presents or the laws of the Realm, and to, from time to time, repeal, alter, or amend the same.

4. The College shall not make any dividend, gift, division, or bonus in money unto or between any of its members.

In Witness, &c.

Special Statutes

I. As to the Court of Governors

1. The Court of Governors may in every calendar year (including that now current) elect any person or persons (not exceeding five in any one year) to be Governors of the College and Members of the Court of Governors for a period of five years from the date of election.

2. The provision in the Charter granted to the College in the 45th year of Her Majesty's Reign authorizing five persons to be chosen as Governors of the College from among the representatives in the Commons House of Parliament of the Counties and Boroughs of Lancashire and Cheshire shall be henceforth repealed, saving always that this repeal shall not affect any person already chosen pursuant to the said provision.

3. The following persons shall be *ex officio* Governors of the College and Members of the Court of Governors, viz.:—

The Chairman of the Lancashire County Council.
The Mayor of Bootle.
The Mayor of Birkenhead.
The Town Clerk of Liverpool.
The Chairman of the Technical Instruction Committee of the Liverpool City Council.
The Chairman of the Technical Instruction Committee of the Birkenhead Town Council.
The Chairman of the Technical Instruction Committee of the Bootle Town Council.

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The Chairman of the Liverpool Board of Legal Studies.
The Chairman of the Liverpool School of Hygiene.
The Chairman of the Liverpool School of Architecture and Fine Arts.
The Chairman of the Liverpool School of Commerce.
The Chairman of the Liverpool University Day Training College.
The Chairman of the Liverpool Northern Hospital.
The Chairman of the Liverpool Southern Hospital.
The Chairman of the Liverpool Medical Institution.
The Chairman of the Edge Hill Training College.

The said persons shall continue in office as Governors and Members as aforesaid only during the periods respectively during which they continue to hold the office in respect of which they have become such *ex officio* Governors and Members as aforesaid.

4. The existing Statutes of the College shall, until repealed or amended, apply so far as they are applicable to the appointment to be made and the Governors to be appointed under these presents.

II. As to the Council of the College

1. As from the commencement of this Special Statute the number of Professors to be chosen to be Governors by the Senate shall be increased to three, who shall all hold office until the October Meeting of the Court of Governors in the year following the year of their election. A third Professor to be such Governor as aforesaid shall be chosen as soon as may be after this Statute comes into force.

2. The Court of Governors shall henceforth choose fifteen instead of eleven persons to be Members of the Council, and such fifteen persons shall all hold office for three years. Four additional Members shall be chosen by the said Court as soon as may be after this Statute comes into force, of whom one shall go out of office at the meeting of the Court of Governors held in October, 1900, two at the said meeting held in October, 1901, and the remaining one at the said meeting held in October, 1902. At the said meeting held in October, 1903, and every subsequent such meeting held in October, one-third of the said fifteen Members shall retire, those then longest in

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office retiring on each occasion, and Members elected to casual vacancies retiring at the times when the persons whom they respectively succeed should have retired. The Council shall decide which of the said four Members shall retire in October, 1900, October, 1901, and October, 1902, respectively. Only three of the five Members retiring in October, 1900, or in any subsequent October shall be eligible for re-election, the remaining two being ineligible for re-election until the October following such retirement.

3. The Municipal Council of the City of Liverpool may appoint three persons to be Members of the Council who shall hold office for three years, and of whom one shall retire on November 1st in every year. The first appointment shall take place as soon as may be after this Statute comes into force, and the first three appointees shall respectively retire (beginning on November 1st, 1900) at dates fixed by the said City Council.

4. The Members of the Council appointed by the Court of Governors and by the said City Council respectively need not be Members of the said Court and City Council respectively.

5. The existing Statutes of the College shall, until repealed or amended, apply so far as they are applicable to the appointments to be made, and the Members of the Council to be appointed under these presents.

In Witness whereof we have caused these Our Letters to be made Patent. Witness Ourself at Westminster, the Twenty-second day of January, in the Sixty-third year of Our reign.

By Warrant under the Queen's Sign Manual.

SEAL.

MUIR MACKENZIE.

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Arthur Hassall, Esq., M.A., by the Chancellor of the University of Oxford.
Dr. A. R. Forsyth, M.A., LL.D., D.Sc., F.R.S., by the Chancellor of the University of Cambridge.
E. M. Hance, Esq., LL.B., by the Chancellor of the University of London.
Professor Sir H. Roscoe, by the Chancellor of Victoria University.
Professor Oliver J. Lodge, D.Sc., F.R.S., by the Senate.
Professor J. MacCunn, M.A., LL.D., by the Senate.
Professor A. M. Paterson, M.D., by the Senate.

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Ex Officio Governors

The Lord Mayor of Liverpool.
The Chairman of the Lancashire County Council.
The Recorder of Liverpool.
The Head Master of the Liverpool Institute.
The Head Master of the Liverpool College.
The Head Master of the Birkenhead Proprietary School.
The Head Master of Merchant Taylors' School, Crosby.
The Chairman of the Liverpool Royal Infirmary.
The Chairman of the Liverpool Royal Infirmary School of Medicine.
The Chairman of the Mersey Docks and Harbour Board.
The Chairman of the Liverpool School Board.
The Chairman of the Liverpool Council of Education.
The President of the Incorporated Law Society of Liverpool.
The Principal of University College, Liverpool.
The Chairman of the Technical Instruction Committee of the County Council of Lancashire.
The Chairman of the Technical Instruction Committee of the Liverpool City Council.
The President of the Incorporated Chamber of Commerce of Liverpool.
The Mayor of Bootle.
The Mayor of Birkenhead.
The Town Clerk of Liverpool.
The Chairman of the Technical Instruction Committee of the Birkenhead Town Council.
The Chairman of the Technical Instruction Committee of the Bootle Town Council.
The Chairman of the Liverpool Board of Legal Studies.
The Chairman of the Liverpool School of Hygiene.
The Chairman of the Liverpool School of Architecture and Fine Arts.
The Chairman of the Liverpool School of Commerce.
The Chairman of the Liverpool University Day Training College.
The Chairman of the Liverpool Northern Hospital.
The Chairman of the Liverpool Southern Hospital.
The Chairman of the Liverpool Medical Institution.
The Chairman of the Edge Hill Training College.

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1899-1900

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Dental Anatomy and Physiology :—	FRANK T. PAUL, F.R.C.S.
Dental Histology :—	C. S. SHERRINGTON, M.A., M.D., F.R.S.
Dental Surgery :—	E. J. M. PHILLIPS, M.R.C.S., L.D.S. *Eng.*
Dental Mechanics :—	E. A. COUNCELL, L.D.S. *Eng.*
Dental Metallurgy :—	T. L. BAILEY, Ph.D.

ASSISTANT AND DEPARTMENTAL LECTURERS AND DEMONSTRATORS

FACULTIES OF ARTS, SCIENCE, AND LAW

History :—	J. R. B. MUIR, M.A., *Balliol College, Oxford.*
Equity :—	OWEN WILLIAM OWEN, M.A., *St. John's College, Cambridge.*
Mathematics :—	FRANK T. SHARPE, M.A., *Emmanuel College, Cambridge.* W. A. HOUSTON, M.A., *Fellow of St. John's College, Cambridge.*
Physics :—	W. H. DERRIMAN.
Electrotechnics :—	ALFRED HAY, B.Sc., M.I.E.E.
Engineering :—	JOHN W. ANDERSON, M.I.M.E. ERNEST BROWN, M.Sc.
Chemistry :—	CHARLES A. KOHN, M.Sc., Ph.D. T. LEWIS BAILEY, Ph.D. ARTHUR W. TITHERLEY, M.Sc., Ph.D. W. B. DAVIDSON, M.A., Ph.D.
Zoology :—	FRANK J. COLE.
Botany :—	F. J. LEWIS.
Architecture :—	*Vacant.*

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FACULTY OF MEDICINE

Anatomy :—	T. R. W. ARMOUR, M.B. D. DOUGLAS-CRAWFORD, F.R.C.S. E. M. STOCKDALE, M.R.C.S., L.R.C.P.
Chemical Physiology :—	A. S. GRUNBAUM, M.A., M.D., M.R.C.P.
Physiology and Histology :—	J. S. MACDONALD, B.A., L.R.C.P., L.R.C.S.
Materia Medica :—	P. H. MARSDEN.
Bacteriology and Pathology :—	J. HILL ABRAM, M.D., M.R.C.P. W. B. WARRINGTON, M.D., M.R.C.P. H. R. JONES, M.A., M.D., D.P.H.
Surgery :—	W. THELWALL THOMAS, F.R.C.S.
Midwifery and Gynæcology :—	A. J. WALLACE, M.D.
Forensic Medicine and Toxicology :—	R. J. M. BUCHANAN, M.D., M.R.C.P.
Dental Anatomy and Histology :—	JOSEPH A. WOODS, L.D.S.
Hygiene :—	*Vacant.*
Clinical Midwifery :—	*Vacant.*
Tropical Medicine :—	H. E. ANNETT, M.D.

TUTORS

Preliminary :—	Professor MacCUNN.
Intermediate and Final B.A. :—	Professor MACKAY.
Intermediate and Final B.Sc. :—	Professor CAREY.
Medical First M.B. :—	Professor HERDMAN.
Engineering (Professional) :—	Professor HELE-SHAW.

PRINCIPAL OF THE TRAINING COLLEGE

Professor W. H. WOODWARD, B.A.

WARDEN OF DAY TRAINING COLLEGE HOSTEL

FRANK T. SHARPE, M.A.

TUTOR IN EDUCATION

Vacant.

ASSISTANT IN METHOD

C. W. BAILEY, M.A.

REGISTRAR

CHEVALIER LONDINI, D.C.L.

SECRETARY AND DEPUTY REGISTRAR

P. HEBBLETHWAITE, M.A.

LIBRARIAN

JOHN SAMPSON.

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FORMER PROFESSORS

Appointed			*Resigned*
1881	PRINCIPAL -	GERALD H. RENDALL, M.A., Litt.D.	1898
1898	„ - -	RICHARD TETLEY GLAZEBROOK, M.A., D.Sc., F.R.S.	1899
	PROFESSORS		
1881	Greek - -	GERALD H. RENDALL, M.A., Litt.D.	1898
1881	English Literature	A. C. BRADLEY, M.A.	1889
1889	„ „	WALTER RALEIGH, M.A.	1900
1882	Mathematics -	A. R. FORSYTH, M.A., LL.D., D.Sc., F.R.S.	1883
1883	„ - -	R. A. HERMAN, M.A.	1885
1881	Physics - -	OLIVER J. LODGE, D.Sc., F.R.S.	1900
1885	Art - -	Sir W. M. CONWAY, M.A.	1888
1888	„ - -	R. A. M. STEVENSON, M.A.	1892
1882	Anatomy - -	Sir WILLIAM M. BANKS, M.D., F.R.C.S., LL.D.	1894
1882	Physiology -	RICHARD CATON, M.D., F.R.C.P.	1891
1891	„ -	FRANCIS GOTCH, M.A., F.R.S.	1895
1884	Pathology - -	A. DAVIDSON, M.D., M.A., M.R.C.P.	1887
1888	„ - -	A. BARRON, M.B.	1894
1882	Medicine - -	A. T. H. WATERS, M.D., M.R.C.P.	1884
			Deceased
1884	Midwifery -	J. WALLACE, M.D.	1898

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FELLOWS, SCHOLARS, COLLEGE STUDENTS, AND HOLDERS OF PRIZES, 1900

FELLOWS

	Date of Election	
George Holt (*Physiology*)	1899	Robert John Ewart, B.Sc., M.B., Ch.B.
„ (*Pathology and Surgery*)	1899	Ernest Edward Glynn, B.A., M.B.
Robert Gee (*Human Anatomy*)	1899	George C. Walker, M.B., Ch.B.
Alexander (*Pathology*) ...	1899	Arthur Stanley Griffith, M.B.

SCHOLARS

1851 *Exhibition* ...	1899	Charles Glover Barkla, B.Sc.
„ „	1900	John C. W. Humfrey, B.Sc.
Bibby	1898	Hester Wingate Ainslie.
„	1900	Thomas Nixon Riley.
Morris Ranger... ...	1899	Constance Mary Bott.
„ „	„	Francis Darcy Mead Barker.
„ „	1900	Janet Margaret Dale.
Sheridan Muspratt ...	1899	Henry Winder Brownsdon (*Exhib.*)
Christopher Bushell ...	1900	James Mercer.
Ladies' Educational Association ...	1899	Florence Lilian Williams.
Elizabeth James ...	1898	John Laverack Ratcliffe.
Edward Rathbone Memorial	1899	Edward Fraser.
„ „ *Commercial*	1899	Gerald Leigh Harbottle.
„ „ „	„	Walter Tattersall.
Charles Beard Research...	1897	John Henry Lumby, B.A. (*Exhib.*)
„ „ „	1899	Edith May Platt, B.A. (*Exhib.*)
Tate Technical Science ...	1898	William Alexander Whitton.
„ „ „ ...	1899	Richard Henry Albery.

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Tate Technical Science ...	1899	Frederick James Brislee.
„ „ „ ...	1900	Douglas C. Eva.
Tate Trustees'	1898	Frank Harvey Farmer.
„ „	1899	George Clay Hubback.
Thomas Hornby ...	1898	Gertrude Hope Barrett.
Liverpool City Council ...	1897	John Herbert Thwaites.
„ „ ...	1898	Frank Thomas Ellis.
„ „ ...	„	Henry Farrington.
„ „ ...	„	Percival Herbert Powell.
„ „ ...	„	Frank Rogers.
„ „ ...	„	James Frederick Spencer.
„ „ ...	„	William Emmanuel Curnock.
„ „ ...	„	Edward Fitzgerald.
„ „ ...	1899	Robert Bruce Foster.
„ „ ...	„	Harold Firth Haworth.
„ „ ...	„	Joseph Pearson.
„ „ ...	„	John Alfred Davenport.
„ „ ...	„	Harold Ernest Morrow.
„ „ ...	1900	George Holme.
„ „ ...	„	Allan Morton.
„ „ ...	„	James Joseph Quirk.
„ „ ...	„	Thomas Frederick Wall.
Sir Richard Moon ...	1899	Frederick Charlesworth.
Derby	1900	Charles Herbert Brown.
Sir Edward Harland ...	1900	
Royal Institution (*Canning*)	1898	Helen Brown Scott Maxwell.
„ „ (*Iliff*) ...	1898	Helen Burn.
„ „ (*Rathbone*)	„	Eleanor Gertrude Crowe.
Pickup	1899	John Henry Sinclair.
Gossage	1899	Douglas Egbert Hunter.
Wallasey Urban District Council	1899	Irene Weatherhead.
„ „	„	Louis Adam Macdonald.
Lundie Memorial ...	1899	Annie Taylor.
Lyon Jones (*Senior*) ...	1899	Owen Thomas Williams.
„ (*Junior*) ...	„	Herbert Richard Hurter.
Robert Gee	1900	John Barr Affleck.
„	„	Bertram Thomas Johnson Glover.
Derby Exhibition ...	1900	John Lyn Dimond.

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COLLEGE STUDENTS

1898	Gertrude Barbara Buck.
	Constance Herschell.
	Helen Grace Whitton.
1899	Edith Mary Blevin.
	Grace Dorothy Elias.
	Margaret Graham.
	Irene Frances Williams.
	John David Ellis Williams.
1900	Emily Chisholm.
	Mary Isabella Dale.
	Eliza Margaret Owen.
	Gladys Maud Imlach.
	Gladstone Walter Worrall.

HOLDERS OF PRIZES

Baring Prize for German	1899	Dora Esther Yates, B.A.
English Oration Cup ...	1899	Walter Greaves Lord, LL.B.
English Essay Prize ...	1900	Margaret Dickin.
Hemans Prize	1900	Sybil Farish Partridge.
William Rathbone Medal	1900	Robert Richardson Cormack.
William Rathbone Prizes		
(Third year)	1900	William Emmanuel Curnock
„ *(Second year)*	„	Fred William Bushell.
„ „	„	Frank Rogers.
„ „	„	Percival Herbert Powell.
„ *(First year)*	„	Philip Vivian Tippet.
„ „	„	Arthur Tetley Beazley.
„ „	„	Frederick Owen Clarke.
Robert Gee Prize ...	1899	Percy A. Browne.
Fletcher Prize ...	1900	Herbert Richard Hurter.

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ASSOCIATES

1. In order to preserve the connexion of past students with the College, a special roll has been instituted for the enrolment of ex-students as Associates.

2. Those students are eligible as Associates who, having attended College lecture courses for not less than three sessions, and having attained a University degree or some other public diploma, have been approved by the Senate for enrolment among the Associates. The Senate further have power of their own motion to confer like recognition upon students who have attained some form of special distinction, though attendance upon College lectures has extended over less than three sessions.

3. Associates have the privilege of using the College Library or Refectory (and any other privileges that the Senate may from time to time confer) upon payment of a fee.

4. The Senate have power at their discretion to remove from the list of Associates any name which it is, in their opinion, undesirable to retain upon the roll.

Anderson, J. G. L., B.A., Vict.
Armstrong, F. E., B.Sc., Vict.
Armstrong, Mary, B.A., Vict.
Auld, Catherine G., B.A., Vict.
Auld, Helen P., B.Sc., Vict.
Auld, Jessie, M.Sc., Vict.
Auld, Margaret D., M.Sc., Vict.
Ball, J. H., B.Sc., Vict.
Band, Stephen, B.A., Vict.
Barnett, L. D., M.A., Litt.D., Vict.; M.A., Camb.
Bate, J. R., B.A., B.Sc., Vict.
Beaumont, Fanny C., M.A., Vict.
Beaumont, Mary F., B.A., Lond.
Bell, J. J., B.A., Vict.
Benatar, D., B.Sc., Vict.
Bennette, V. B., M.B., Lond.
Bentley, C. A., M.B., Edin.
Bird, L. W., B.A., Vict.
Blackledge, Katherine, B.A., Vict., and Camb.
Boulton, R. E., B.Sc., Vict.
Bowen, D. J., M.Sc., Vict.
Bramley-Moore, Evangeline, B.A., Vict.
Brew, Louise C., B.A., Vict.
Broadbent, Ellinor L., M.A., Vict.
Brown, W. L., M.Sc., Vict.
Browne, E. G., M.A., Vict.
Buckley, Lucy, B.Sc., Vict.
Burman, Sarah, B.A., Vict.
Burn, Irene, M.A., Vict.
Burn, Mary, B.A., Vict.
Burnet, R., B.Sc., Vict.
Burnett, T. R., B.Sc., Vict.
Burnley, W. E., B.A., Vict.

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Callaghan, C. J., B.Sc., Vict.
Cannell, J. K., B.Sc., Vict.
Carey, A., M.Sc., Vict.
Carey, E., LL.B., Vict.
Carey, J., B.A., Vict.
Carson, St. L., B.Sc., Vict.; B.A., Camb.
Case, R. H., B.A., Lond.
Chalmers, A. J., M.D., Vict.
Clubb, J. A., M.Sc., Vict.
Cole, Hylda C., B.A., Vict.
Conroy, J. T., B.Sc., Lond.
Couldrey, P. S., B.Sc., Vict.
Crabtree, W. R., M.Sc., Vict.
Crossley, L., A.I.C.
Davies, W. E., M.B., Vict.
Eastwood, J. H., B.A., Vict.
Edgecombe, E. C., B.A., Lond.
Ellis, E. Victor, M.Sc., Vict.
Evans, H., B.Sc., Vict.
Ewart, E. M., M.A., Vict.
Fleming, W. C., B.A., Vict.
Fortune, A. P., B.A., Vict.
Francis, F. E., B.Sc., Vict.
Fraser, W., B.Sc., Vict.
Fryer, A. F., M.Sc., Vict.
Gibson, Louisa, B.A., Vict.
Given, E. C., A.M.I.C.E.
Given, J. C., M.B. Lond.
Graveson, Caroline C., B.A., Lond.
Green, P. C., B.A., Vict.
Griffiths, W. H., B.Sc., Vict.
Gschwind, H. F., B.A., Vict.
Hacking, Margaret, B.A., Vict.
Hale, J., B.A., Vict.
Hale, W. R., M.A., Vict.
Hammond, Margaret L., B.A., Vict.
Harnden, Maud E., B.A., Vict.
Hanckel, A. W., M.Sc., Vict.
Hardwick, W. R., B.Sc., Vict.
Hartley, Harriet A., B.A., Vict.
Harvey, E. J. W., B.Sc., Vict.
Herdman, Jane B., B.Sc., Lond.
Herman, Amy G., B.A., Lond.
Hetherington, A. E., Ph.D.
Hignett, J., M.A., Vict.
Honeyburne, M., B.A., Vict.
Hooper, Alice C., B.A., Vict.
Hoult, W. B., M.A., Vict.
Hunter, E. L., B.A., Vict.
Imlach, C. M., B.A., Vict.
Inman, F. W., M.B., Vict.
Innes, W. R., M.Sc., Vict.; Ph.D.
Japp, Eliza, B.A., Lond.
Jones, Annie B., M.A., Vict.
Kellett Smith, J. S., F.R.C.S., Lond.
Kenyon, R. E., B.Sc., Vict.
Kerr, Elizabeth, B.A., Vict.
Lamb, J. D., B.A., Vict.
Law, A., B.Sc., Vict.
Le Feuvre Noémi, B.A., Lond.
Leicester, J., Ph.D.
Leigh, Randle, M.D., B.Sc., Lond.
Lester, E. C., B.Sc., Vict.
Lewis, C. R., M.A., Vict.
Lloyd, G. M., B.A., B.Sc., Vict.
Lloyd, R. J., D.Lit., M.A., Lond.
Lord, W. G., LL.B., Vict.
Lumby, J. H., B.A., Vict.
Lundie, C. C., B.A., Vict.
Marples, P. M., B.Sc., Vict.
Marston, Fanny, B.A., Vict.
Martin, J. M. H., M.D., Vict.
McClelland, W., M.B., Vict.
McConnell, Ellen K., M.A., Vict.
McCubbin, W. A., F.I.C.
McFall, J. E. W., M.B., Vict.
Macgregor, J. M., B.A., Vict.
McKnight, Ethel T., B.A., Vict.
McNair, L. C., B.Sc., Vict.
McPherson, Ethel L., B.A., Vict.
Maguire, J. W., B.A., Lond.
Melhuish, Sarah, B.A., Vict.
Moore, S. G., M.B., Lond.
Moorhouse, E. A., LL.B., Vict.
Morrish, Edith R., B.A., Vict.
Morrow, J., M.Sc., Vict.
Muir, J. R. B., M.A., Vict.; B.A., Oxf.
Nelson, P., M.B., Vict.
Nicholls, J. M., B.A., Vict.
O'Brien, F., B.Sc., Vict.
Owen, R. C., M.R.C.S., Engl.
Owens, Elizabeth J., B.A., Vict.
Platt, Edith M., M.A., Vict.
Porter, Alfred W., B.Sc., Lond.
Postance, Eva C., B.A., Vict.
Quinn, J. C., M.Sc., Vict.
Rawson, S. G., B.Sc., Vict.

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Raymond, Annie W., B.A., Vict.
Riddlesworth, W. H., B.Sc., Vict.
Rigby, Edward H., B.Sc., Vict.
Roscoe, R., B.A., Vict.
Ross, Blanche E., B.A., Vict.
Rowe, Janie A., B.A., Vict.
Rowe, Lillie, B.A., Vict
Sandford, Dora L., M.A., Vict.
Scott, Margaret, B.A., Vict.
Shallcross, Lucy E., B.A., Vict.
Sharpley, J. W., B.A., Vict.
Shaw, J. H., M.B., Lond.
Shearer, W. C., L.D.S., Edin.
Sherratt, Marion, M.A., Lond.
Sherriff, Isabel B., M.A., Vict.
Slefrig, S., B.Sc., Vict.
Smythe, J. S., B.Sc., Vict.
Soley, Gertrude L., B.A., Vict.
Speechley, Mary, B.A., Vict.
Stanley, H. E. T., B.A., Vict.
Stead, A., B.Sc., Vict.
Stewart, C. H., M.Sc., Vict.
Strong, A. T., B.A., Vict.
Sumner, J., B.A., Vict. and Oxf.
Teare, J., M.B., Ch.B., Vict.
Thomas, A., B.Sc., Vict.
Thornton, W. M., M.Sc., Vict.
Titherley, A. W., M.Sc., Vict.; Ph.D.
Turner, J. E., B.A., Vict.
Twemlow, J. A., B.A., Lond. and Oxf.
Ure, J. M., B.Sc., Vict.
Walton, Ethel C., B.A., Vict.
Warham, Amy E., B.Sc., Vict.
Warner, C. E., B.Sc., Vict.
Wertheimer, J., B.A., B.Sc., Lond.
Williams, Sarah B., M.A., Vict.
Willis, John C., B.A., Camb.
Wolkenberg, C., B.A., Vict.
Woodward, R. W., B.A., Lond.
Yates, Dora E., B.A., Vict.
Zagury, L., B.Sc., Vict.

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STUDENTS' REPRESENTATIVE COUNCIL

The Men's Council consists of fifteen members, for whose election the students are grouped in five sections—Arts, Science, and Engineering returning three representatives each, Law one, and Medicine five. And in addition to these fifteen members, College Societies which are affiliated to the Council elect either one or two representatives, according to the number of their members.

The Women's Council consists of ten members, seven from the Arts side, and three from different Societies.

The functions of the Council are:

(*a*) To represent the students in such matters as affect their interests.

(*b*) To afford a recognized means of communication between the students and the College authorities, as well as the general public.

(*c*) To promote academic and social unity among the students by clubs, debates, Social entertainments, and by the direction of a College periodical, *The Sphinx*.

The reading rooms (Men's and Women's) are under the jurisdiction of their respective Councils, and are open to subscribing students only. The subscription is 2/6 for the session.

For matters of joint concern the two Councils unite and act as a Joint Council.

Copies of the 'Constitution and By-Laws' of the Council may be obtained free on application to the Secretaries.

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VICTORIA UNIVERSITY

GRADUATES

FACULTY OF ARTS

Doctor of Letters

1900 Barnett, Lionel David

Master of Arts

Date of Degree		*Date of Degree*	
1895	Barnett, Lionel David	1897	Hoult, Walter Brook
1893	Beaumont, Fanny Constance	1900	Jones, Annie Beatrice
1898	Broadbent, Ellinor Lucy	1899	Lewis, Charles Richard
1898	Browne, Edgar Gordon	1892	McConnell, Ellen Kennedy
1900	Burn, Irene	1899	[2]Muir, John Ramsay Bryce
1894	[1]Ewart, Edith Margaret	1900	Platt, Edith May
1898	Glasgow, Edwin	1897	Sandford, Dora Lucy
1897	Hale, William Ramsay	1900	Sherriff, Isabel Brown
1895	Handley, Christine	1893	[3]Williams, Sarah Bland
1897	Hignett, John		

1. Head Mistress of Intermediate School, Abertillery, Monmouthshire.
2. Assistant Lecturer in History at University College.
3. Principal of H. H. the Maharajah's High School for Girls, Trevandrum.

Bachelor of Arts

Date of Degree		*Date of Degree*	
1897	Aldridge, Geoffrey de Ybarrondo	1899	Bell, John Johnston
1897	Anderson, Jasper George Lichfield	1888	Birch, Sarah (Mrs. W. D. Hull)
1891	Anderson, Lewis Pemberton	1898	Bird, Lancelot William
1894	Anderton, Neander	1900	Birkhead, Alice
1890	Armstrong, Mary	1896	Blackledge, Katharine
1897	Auld, Catherine Gemmell	1894	Bramley-Moore, Evangeline
1897	Band, Stephen	1900	Brash, Charlotte Agnes
1899	Barkway, James Lumsden	1899	Brew, Louise Constance
1892	Barrett, Mary (Mrs. H. M. Speechly)	1898	Briggs, Charles Lionel
1894	Bate, James Reed, B.Sc.	1898	Burman, Sarah
1888	Beckett, Elizabeth (Mrs. J. Kerr)	1889	Burn, Mary
		1899	Burnley, William Ewart
		1897	Carey, James
		1898	Clark, Nellie

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Date of Degree	
1896	Cole, Hylda Constance
1896	Collins, Mary Catharine
1896	Coopland, George William
1898	Coward, Milburga Scott
1900	Craine, David
1898	Craze, Bessie
1896	Dodd, Emmeline Beatrice
1899	Eastwood, John Hastings
1890	Ellison, Florence
1890	Fleming, William Cowan
1897	Forbes, Mary Cameron Gunn
1899	Fortune, Alfred Price
1895	Foster, Elsie Kathleen
1891	[1]Gibson, Louisa
1900	Greaves, Mary Helena
1899	Green, Percy Charles
1898	Grundy, Allan Wilson
1896	Gschwind, Henri François E.
1898	Hacking, Margaret Atherton
1898	Hale, James
1900	Haley, Mary Beatrice
1897	Hammond, Margaret Louise
1897	Harnden, Maude Elizabeth
1897	Hartley, Harriett Annie
1898	Hoare, Louisa O'Donoghue
1895	Honeyburne, Mary
1897	Hooper, Alice Constance
1897	Howard, Thomas Godwin Charsley
1899	Hunter, Ernest Logan
1898	Imlach, Cedric Macgregor
1900	Imlach, Gladys Maud
1894	Lackland, Leonard
1897	Lamb, John David
1895	Lloyd, George Moss, B.Sc.
1896	Lumby, John Henry
1900	Lumby, Charles Frederick
1899	Lucan, Amy
1891	Lundie, Charles Cowan
1899	Macgregor, John Marshall
1890	Macpherson, Ethel Louisa
1899	Marston, Fanny
1897	Maule, Catherine Jane
1899	McKnight, Ethel Thomasine
1890	Melhuish, Sarah
1899	Morice, Edith Lea
1898	Morrish, Edith Rodenhurst
1894	Newman, Benjamin Hutchinson
1896	Nicholls, Ernest James
1897	Nicholls, John Macintyre
1894	Noble, Gertrude Louise (Mrs. C. E. Soley)
1888	[2]Owens, Elizabeth Jane
1900	Parr, Agnes Winifred
1900	Paschali, Cleonike Calliope
1894	Patterson, Elizabeth Gertrude
1895	Pearce, Augusta Clarice
1900	Phillips, Hilda Mary
1899	Pitts, Catherine Alice
1899	Postance, Eva Cecilia
1897	Raymond, Annie Walton
1895	Roberts, Florence Edith
1896	Roscoe, Robin
1899	Ross, Blanche Edith
1894	Rowe, Janie Adelaide
1894	Rowe, Lillie
1890	Ryan, May
1896	Scott, Margaret
1899	Shallcross, Lucy Emily
1895	Sharpley, John Warner
1892	Stanley, Henry Edmund T.
1896	Strong, Archibald Thomas
1892	Sumner, Joseph
1896	Thomas, Percy Goronwy
1894	Thomson, Andrew
1894	Trietschel, John Albert Martin
1897	Turner, John Edward
1900	Turton, Arthur Edward
1898	Turton, Charlotte
1898	Walton, Ethel Constance
1900	Walton, Florence Helen
1898	Williams, Charles Thomas
1898	Williams, Eva Constance
1897	Williams, Harold Edmund
1893	Winstanley, Edward William
1899	Wolkenberg, Cyril
1897	Wooll, Edward
1899	Yates, Dora Esther

1. Head Mistress of the County Girls' School, Hawarden.
2. Head Mistress of the County Girls' School, Barmouth.

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FACULTY OF SCIENCE

Master of Science

Date of Degree	
1891	[1]Auld, Jessie
1895	Auld, Margaret Downes
1898	Barnes, Charles Kepler
1897	Bowen, David Jones
1900	Brown, Ernest
1898	Brown, William Lowe
1894	Carey, Arthur
1897	Clubb, Joseph Albert
1892	Crabtree, Walter Robinson
1893	Crookes, Bernard Humphrey
1898	Davidson, Jonathan Roberts
1893	Ellis, Er Victor
1899	Fraser, William Norman
1895	Fryer, Arthur Frederick
1899	Hanckel, Alfred Woods
1897	Harger, John
1899	Hazlehurst, Alfred Noel
1899	Heap, Richard Rankin
1898	Hogarth, John Preston
1897	Innes, William Ross
1900	Jackson, Arthur Randell
1897	Kenyon, Richard Ernest
1897	[2]McClure, William Ewart
1899	Morrow, John
1895	Porter, Ralph Classon
1894	Quinn, James Cardwell
1897	Rudolph, Norman Scott
1899	Shores, Jeffs Henry
1897	Smith, Frank Wagstaff
1900	Stewart, Charles Henry
1898	Thornton, William Mundell
1899	Threlfall, Henry Spencer

1. Head Mistress of County Girls' School, Llandovery.
2. Fellow of St. John's College, Cambridge.

Bachelor of Science

Date of Degree	
1898	Anderson, Cyril Clark Segar
1899	Armstrong, Francis Edwin
1899	Auld, Helen Park
1896	Baillie, Thomas Bryson
1896	Ball, James Handby
1898	Bally, Harold Spencer
1898	Barkla, Charles Glover
1894	Bate, James Reed, B.A.
1894	Benatar, David
1899	Bibby, James
1899	Boulton, Robert Edgar
1897	Bradley, William Timothy
1900	Brownsdon, Charles
1900	Brownsdon, Henry Winder
1891	Buckley, Lucy
1897	Burnet, Robert
1898	Burnett, Theodore Ridley
1899	Callaghan, Charles James
1898	Callaghan, Frank
1899	Cannell, John Kaneen
1896	Carmichael, John Fisher
1892	Carson, George E. St. Lawrence
1896	Caspari, William Augustus
1899	Connolly, Thomas Francis
1895	Cook, Charles
1900	Cormack, Robert Richardson
1897	Couldrey, Paul Sidney
1900	Duff, John Bruce
1899	Evans, Horace Walter
1897	Evans, John Eric
1894	Ewart, Arthur Ernest
1896	Ewart, Robert John
1894	Farmer, John Taylor
1897	Farmer, Robert Crosbie
1897	Forber, Edward Rodolph
1900	Foulkes, William
1892	Francis, Francis Ernest
1900	Fry, Stafford
1900	Gabbatt, John Percy
1900	Graham, John
1900	Greenall, Charles Edwin

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Date of Degree	
1899	Griffiths, William Henry
1899	Hall, Archibald Alexander
1895	Hardwick, William Roscoe
1897	Harvey, Edwin Josiah William
1898	Hewitt, Francis William
1899	Hooper, Olive Octavia
1895	Hooton, William Marrs
1895	Hughes, Frederick Selby
1899	Humfrey, John Charles Willis
1897	Hyde, Frank King
1895	Kaizer, Myer
1899	Kelly, Robert Ernest
1893	Ker, Andrew Martin
1895	Kettlewell, John Gibson
1895	Kitchen, Jonathan
1899	Law, Arthur
1899	Lester, Edward Claude
1898	Linton, Stanley Fox
1896	Lloyd, George Moss, B.A.
1900	Lloyd, John Barrow
1900	Lloyd, William Gibbs
1899	Ludlam, Ernest Bowman
1900	Mannings, Richard Arnold
1897	McNair, Lawrence Crawford
1899	Mann, John Carl
1897	Marples, Percy Morris
1899	Martin, Vincent Joseph
1892	Montgomery, John Knowles
1894	Nuttall, Edwin James
1899	O'Brien, Frederick
1900	Owen, Gwilym
1900	Owen, Idris Larkby
1898	Parry, William Lawrence
1896	Peck, Ernest Lawrence
1897	Riddlesworth, William Henry
1891	Rigby, Edward Hulme
1897	Rigby, Harold
1896	Roberts, William Henry
1898	Rosenheim, Ernest Albert
1898	Ross, William McGregor
1898	Slefrig, Samuel
1900	Smith, Albert Joseph
1896	Smythe, John Seabury
1898	Spencer, Edmund Stone
1899	Stead, Arthur
1897	Stewart, Charles Henry
1900	Stubbs, John Roberts
1900	Sutcliffe, Luke
1898	Tayler, John Bernard
1899	Thomas, Arnold
1900	Thwaites, John Herbert
1896	Trantom, William
1899	Ure, James Matthew
1890	Warham, Amy Elizabeth
1899	Warner, Claude Errington
1892	Waterhouse, William John
1893	Watson, Arthur Alfred
1896	Wilson, Percy George
1896	Worgan, Alfred Edward
1900	Young, Maude Evelyn
1892	Zagury, Leon

FACULTY OF LAW

Bachelor of Laws

Date of Degree	
1899	Booth, John Bennion
1897	Burroughs, Benjamin Palmer
1896	Carey, Edward
1897	Cleaver, Leonard Swainson
1898	Harbottle, David Lindsay
1900	Hughes, Robert Bristow
1899	Hurworth-Robinson, Thos. C.
1899	Lord, Walter Greaves
1899	Moorhouse, Edward Albert
1898	Parry, Hugh Lloyd
1900	Quiggin, Arthur John
1898	Riley, Henry Lindon

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FACULTY OF MEDICINE

Doctor of Medicine

Date of Degree	
1899	Annett, Henry Edward
1900	Armstrong, Hubert
1896	Beaver, Robert Atwood
1889	Buchanan, Robert James McLean
1893	Chalmers, Albert John
1893	Lightbody, John Henry
1892	Martin, John Michael Harding
1896	Nixon, Herbert Tomlinson

Bachelor of Medicine and Bachelor of Surgery

Date of Degree	
1899	Alderson, George Pickles
1898	Alexander, David Alfred
1898	Anderson, Jonas William
1897	Aungier, Mark
1896	Badger, Walter Spencer
1899	Bark, Thomas Taylor
1891	Beaver, Hugh Atwood
1900	Benington, Philip
1895	Bickerton, Reginald Ernest
1892	Bicknell, Arthur
1900	Billing, John Henry
1899	Broad, William Henry
1894	Brown, William McIntyre
1899	Browne, Percy Alfred
1900	Burnet, Robert
1896	Christophers, Samuel Rickard
1886	Collins, Arthur Ward
1886	Corkhill, Joseph George Garibaldi
1896	Crake, Herbert Milverton
1895	Darbyshire, Douglas Edward
1896	Davies, John Harcourt
1892	Davies, William Edwin
1894	Day, Frank Herbert
1899	Depree, Sidney Smalbroke
1893	Dickinson, Harold Bertie
1900	Dimond, John Lyn
1897	Dutton, Joseph Everett
1889	Ellis, John William
1899	Ewart, Robert John, B.Sc.
1891	Fairrie, Septimus Harold
1899	Ferguson, Charles Henry
1899	Fletcher, Hubert Middlecott
1890	Gould, Jay
1897	Graham, Walter
1899	Grierson, John Turner
1897	Griffith, Arthur Stanley
1891	Harris, Alfred
1898	Hart, Herbert Frere
1896	Hay, John
1893	Hayward, William Davey
1897	Henderson, Henry Martyn
1899	Henderson, William Savile
1893	House, Samuel Herbert
1899	Howard, John Albert
1898	Inman, Frederick William
1900	Jackson, Arthur Randell
1900	Johnson, Lionel Capper
1883	Jones, Clement Royds
1886	Laslett, Ernest Edward
1897	Lawson, Garnet Gloag
1894	Lindon, Ernest Hingston Lorraine
1900	Linton, Stanley Fox
1894	Livsey, William Edward
1899	Lovegrove, Frederic Thomas Alexander
1892	McClelland, William
1894	McDougall, James Edlington
1899	McFall, John Edward Whitney
1896	Main, David William
1897	Marshall, Frank Edgar
1896	Martin, John Graham
1898	Mawdsley, Henry Aloysius
1892	Mawdsley, Joseph Bentley
1894	Mercer, Thomas Unsworth
1893	Miller, Edwin Swainson

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Date of Degree		*Date of Degree*	
1899	Miller, John Watterson	1897	Smith, James Eckersley
1894	Minshall, Ernest Ditchfield	1893	Spencer, Edward
1889	Molyneux, Edward	1896	Stahlknecht, Bernard
1898	Moore, Samson Courtenay	1897	Sutherland, Robert
1890	Moore, Samson George	1890	Teare, John
1896	Morris, Thomas Glynn	1894	Veale, Frederick John de Coverley
1896	Nelson, Philip		
1893	Nixon, John Pollock	1898	Walker, George Charles
1893	O'Hagan, John Joseph	1899	West, Harry
1892	Partridge, Arthur John	1899	Whitwain, Leonard Sykes
1897	Pitt-Taylor, Francis Stanhope	1897	Willett, James Hayward
1893	Robinson, Harry Armitage	1896	Williams, William Batten
1894	Ross, Stephen John	1891	Wilson, Arthur Chandler
1891	Shannon, James Webster	1896	Wood, Alfred Arthur
1891	Shaw, John Hepworth	1894	Wood, Robert Lucius
1896	Smith, Edward Archibald		

LIST OF DECEASED GRADUATES

Date of Death		
1894	Jan. 26	Knight, Samuel Ratcliffe, M.B. (1891)
1895	Feb. 17	Woods, Frederick John, M.B. (1893)
1897	July 22	Creighton, Thomas Henry, B.Sc. (1894)
1898	May 10	Hurter, David Garnett, M.B. (1897)

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UNIVERSITY OF LONDON

GRADUATES

FACULTY OF ARTS

Doctor of Letters

1890 Lloyd, Richard John

Master of Arts

1891 Worsfold, Lucy Elizabeth

Bachelor of Arts

Date of Degree		*Date of Degree*	
1891	Beaumont, Mary Frances	1891	Marshall, Maud Mary
1899	Brew, Frances Violet	1889	Stephens, Amelia
1899	Broadhurst, Mary Adelaide	1897	Taylor, Frederick George
1888	Case, Robert Hope	1884	Thomas, Alfred Patton
1897	Dixon, Michael Cory	1886	Thomas, John Josiah
1887	Edgecombe, E. Chorley	1897	Thomas, Martha
1895	Graveson, Caroline C.	1894	Trubshaw, Edith K. Hill
1887	Herman, Amy Gertrude	1889	Twemlow, Jesse Alfred
1898	Highton, Eliza Caroline	1899	Walker, Jessie Mary
1890	Japp, Eliza	1899	Warry, Edwin Graham
1890	Le Feuvre, Noémi	1882	Wertheimer, Julius
1898	Lindsay, Horatio William	1898	Weston, William Jayne
1890	McLaughlin, James Bede	1898	Willing, William Sherwill
1887	Maguire, John Wilkinson	1886	Woodward, Robert

FACULTY OF SCIENCE

Doctor of Science

Date of Degree		*Date of Degree*	
1897	Ewart, Alfred James	1889	Rawson, Sidney George

Bachelor of Science

Date of Degree		*Date of Degree*	
1889	Conroy, James Terence	1895	Lawrenson, Thomas Alfred
1893	Henderson, William Savile	1897	Pople, George Edward
1891	Holt, Jane Brandreth (Mrs. Herdman)	1890	Porter, Alfred William
		1898	Ross, Winnifred Mary
1895	Jones, Charles Edward	1885	Wertheimer, Julius
1894	Laslett, Ernest Edward	1897	Whitehead, William Arthur

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FACULTY OF LAW

Bachelor of Laws

1899 Farmer, Frank Morley

FACULTY OF MEDICINE

Doctor of Medicine

Date of Degree		*Date of Degree*	
1889	Abram, John Hill	1893	Evans, John
1888	Barendt, Frank Hugh	1894	Given, John Cecil M.
1897	Dickinson, Harold B.	1899	Gullan, Archibald G.
1896	Edgecombe, Wilfred	1891	Leigh, Randle

Bachelor of Medicine and Bachelor of Surgery

Date of Degree		*Date of Degree*	
1891	Bennett, Vivian Boase	1888	O'Brien, Patrick Moriarty
1896	Maughan, James	1897	Owen, John
1887	Nevins, John Ernest	1894	Swift, Sidney Sampson

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EXAMINATION LISTS, 1899-1900

VICTORIA UNIVERSITY

UNIVERSITY SCHOLARSHIPS AND PRIZES

University Scholarship in History - -	J. J. Bell, B.A.
Derby Scholarship (Mathematics) - -	J. P. Gabbatt
Leblanc Medal (Technological Chemistry) -	E. B. Ludlam, B.Sc.
University Scholarship in Medicine - -	A. G. Christian

FACULTIES OF ARTS, SCIENCE, AND LAW

I. Examinations for Degrees with Honours

Doctor of Letters - - - -		L. D. Barnett, M.A.
B.A. Honours in Classics - -	*Class* 2	P. C. Green, B.A.
B.A. Honours in History - -	*Class* 1	J. J. Bell, B.A.
B.Sc. Honours in Mathematics -	*Class* 1	J. P. Gabbatt
,, ,, -	*Class* 2	R. A. Mannings
B.Sc. Honours in Physics - -	*Class* 1	C. G. Barkla, B.Sc.
B.Sc. Honours in Engineering -	*Class* 1	R. R. Cormack
,, ,, -	*Class* 2	A. Thomas, B.Sc.
B.Sc. Honours in Chemistry -	*Class* 1	E. B. Ludlam, B.Sc.
,, ,, -	*Class* 2	H. W. Brownsdon
B.Sc. Honours in Physiology -	*Class* 2	W. G. Lloyd

II. Examinations for Ordinary Degrees

M.A. and M.Sc.

M.A. in Classics - - - -	E. L. Hunter, B.A.
,, ,, - - - -	Lucy E. Shallcross, B.A.
,, ,, - - - -	C. Wolkenberg, B.A.
M.A. in English - - - -	Fanny Marston, B.A.
,, ,, - - - -	Edith L. Morice, B.A.
,, ,, - - - -	Dora E. Yates, B.A.
M.Sc. in Physics - - - -	F. Callaghan, B.Sc.
M.Sc. in Chemistry - - -	A. A. Hall, B.Sc.

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Final B.A. and B.Sc.

December, 1899

B.A.

Div. 2. Amy Lucan
Mary H. Greaves

June, 1900

B.A.		*B.Sc.*	
Div. 1.	D. Craine	*Div.* 1.	S. Fry
	Gladys M. Imlach		G. Owen
	C. F. Lumby		A. J. Smith
	Agnes W. Parr		J. R. Stubbs
Div. 2.	Alice Birkhead		J. H. Thwaites
	Charlotte A. Brash	*Div.* 2.	C. Brownsdon
	Mary B. Haley		J. B. Duff
	Cleonike C. Paschali		W. Foulkes
	Hilda M. Phillips		J. Graham
	A. E. Turton		C. E. Greenall
	Florence H. Walton		J. B. Lloyd
			I. L. Owen
			L. Sutcliffe
			Maude E. Young

Certificates for Women

Marion E. Lyster *(English Literature)*
Elizabeth Watkins *(Italian)*

Final LL.B.

Div. 1. R. B. Hughes
A. J. Quiggin

Intermediate B.A. and B.Sc.

October, 1899

Int. B.A.	*Int. B.Sc.*
Mary C. Bendall	Gertrude Sloane
Charlotte A. Brash	
Violet S. Campbell	
Louisa Chadwick	
Margaret Watson	

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June, 1900

Int. B.A.	*Int. B.Sc.*
B. B. B. Benas	R. H. Albery
Edith M. Blevin	H. E. Bloor
Elizabeth I. Boyd	A. Brighouse
Gertrude B. Buck	W. J. Chater
Helen Burn	J. W. Cropper
Elizabeth P. Chisholm	Margaret M. Cussans
Mary Collins	W. Donaghy
Elizabeth S. Crichton	F. H. Farmer
Grace D. Elias	R. B. Foster
W. Elliott	J. F. Gill
T. Fell	J. H. Gorst
Bessie Gibson	H. M. Hance
Florence Handley	Maud Harrison
C. C. Johnson	J. McConnan
Catherine D. McDonald	J. Pearson
L. A. Macdonald	J. H. Reid
L. H. Smythe	A. T. Roberts
Helen Grace Whitton	N. Smith
Edith S. Williams	W. Tattersall
Florence L. Williams	J. Thomson
Irene F. Williams	G. W. Worrall
J. G. Williams	W. T. Young

Intermediate LL.B.

Div. 1.	W. Bell	*Div.* 2.	F. E. Bodel
	F. R. de Montmorency		G. H. E. Grey
	E. Fraser		G. A. Ross
			R. W. H. Thomas

Preliminary Examination

October, 1899

Div. 2. H. E. Bloor
H. N. Giles
J. F. Gill
J. H. Gorst
G. D. Hope
J. C. Lyon
G. J. Roberts
G. W. Worrall

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June, 1900

Div. 1.	F. D. M. Barker	*Div.* 2—*continued.*	G. B. Forrest
	Amy P. Baynes		L. R. Fraser
	F. Charlesworth		Margaret Graham
	Jessie D. Dalglish		R. W. Heaton
	Margaret Dickin		T. O Hirst
	T. G. Fullerton		W. Hoult
	H. F. Haworth		Jane Leech
	G. C. Hubback		W. R. J. A. Leonardi
	D. E. Hunter		A. C. Mitchell
	A. Oldroyd		H. Owen
Div. 2.	D. Campbell		Gladys M. Richardson
	T. Campbell		W. H. Schofield
	J. H. Clarke		C. H. S. Stephenson
	E. P. Coston		E. L. Vicars
	J. A. Davenport		T. E. Waller
	W. H. Dickison		R. McG. Watt
	A. W. Duncanson		Irene Weatherhead
	W. H. Fell		J. S. Young
	E. Fitzgerald		

FACULTY OF MEDICINE

Final M.B. and Ch.B.

March, 1900

Part 1.	J. L. Beddoes	*Part* 2.	W. H. Broad
	J. H. Billing		S. S. Depree
	F. P. Wilson		F. T. A. Lovegrove

July, 1900

Part 1.	H. Bates	*Part* 2.	P. Benington
	C. W. Budden		J. H. Billing
	S. W. Davies		R. Burnet
	G. W. Gelderd		J. L. Dimond *(2nd Class Honours)*
	V. J. Glover		A. R. Jackson *(2nd Class Honours)*
	F. Griffith		L. C. Johnson
	A. G. Jackson		S. F. Linton
	R. E. Kelly		
	J. C. Mann		
	J. S. W. Nuttall		
	T. F. Pugh		
	R. D. Willcocks		

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Second M.B. and Ch.B.

March, 1900

A. *Anatomy and Physiology*

H. M. Berry
J. P. Bligh
J. L. Hawkes
H. E. Heapy
A. S. Hopper
J. A. Johnson
C. O. Jones
G. W. N. Joseph
R. E. Knowles
H. F. Woolfenden

B. *Materia Medica & Pharmacy*

A. G. Jackson
A. B. Sykes
G. F. C. Walker

July, 1900

A. *Anatomy and Physiology*

S. Brown
R. T. Dobson
E. F. Hoare
H. McManus
W. Rotheram
J. N. M. Sykes
I. C. Thorburn
G. F. C. Walker

B. *Materia Medica & Pharmacy*

J. P. Bligh
E. Gibson
J. P. Henderson
A. Hendry
W. E. Hewitt
C. A. Hughes
H. R. Hurter
G. Laurence
J. T. Lloyd
J. F. McCann
W. Rotheram
F. H. Salisbury
H. Woods

First M.B.

October, 1899

Part 1. *Chemistry and Physics*

J. A. Bligh
E. S. H. Gill
L. Hutchinson
T. L. Kenion

Part 2. *Biology*

D. J. Mulholland
H. G. Thompson
A. Warburton
G. H. A. Westby

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June, 1900

Part 1. *Chemistry and Physics*

J. L. Browne
A. W. Byrne
P. Hick
G. H. Joseph
L. D. Napier
T. E. Walker
H. W. L. Waller
G. H. A. Westby

Part 2. *Biology*

J. L. Browne
A. W. Byrne
W. E. Dimond
A. C. Edwards
A. E. Grisewood
P. Hick
W. D. Higson
G. J. Keane
T. L. Kenion
J. McClellan
S. W. McLellan
J. S. Rowlands
G. C. Scott
T. E. Walker
H. W. L. Waller
G. W. Williams

Entrance in Arts

June, 1900

Div. 2. J. F. Edmiston

Sanitary Inspection Certificate

J. J. L. Clarke

Teachers' Diploma

Margaret A. Hacking, B.A.
A. J. Smith, B.Sc.

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UNIVERSITY FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES.

(*For full regulations see Victoria University Calendar, pp.* 161-177).

I. FELLOWSHIPS.

Four Fellowships are offered annually, each of the value of £100, and tenable for one year.

The object of the University Fellowships is the encouragement of study and research, and every Fellow is required to devote the whole of the time during which he continues to hold the Fellowship to the pursuit of such study or research, under conditions approved by the Board of Studies. In special cases an additional grant, not exceeding £20, may be made to the Fellow by special vote of the Council, to assist him in carrying out his researches.

Of the four Fellowships, one is awarded for excellence and promise in the subjects of one of the Honours Schools of the Faculty of Arts, or in the Faculty of Law; another in one of the Honours Schools of the Faculty of Science; another for excellence and promise in one or more of the subjects of the Second or Final M.B. examination; and the fourth may be awarded in any of the Faculties.

No Fellow is permitted to hold a University Fellowship in conjunction with any other Fellowship, Scholarship, or Exhibition, except by permission of the Board of Studies.

No Fellow is permitted to hold any paid appointment, or to undertake remunerative work, without previous permission from the Board of Studies.

The University Fellowships are open to all graduates who have proceeded to the B.A. or B.Sc., or M.B. and Ch.B. degrees with Honours, or the LL.B. degree in Victoria University, but such graduates are eligible only during the eighteen months immediately succeeding their Final examination in an Honours School or in the Faculty of Law or Medicine.

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At the expiration of the first tenure of a Fellowship, a Fellow is permitted, irrespective of the date of graduation, to submit his name for re-election to a University Fellowship, and it is within the power of the electors thereupon to elect him to a second, but not to any third or subsequent tenure.

All candidates for University Fellowships are required to send in their names in writing to the University Registrar on or before June 1 in each year, except for the Medical Fellowship, for which the date is July 1. They are invited to support their application by submitting any thesis or original research, and by any other evidence of their qualifications that they think fit.

Fellows are required to furnish a report of the work done by them during the tenure of their Fellowships, such report to be laid before the Board of Studies.

The annual election of Fellows is made as soon as convenient after the publication of the lists of the successful candidates in the several Honours Schools. The election to the Medical Fellowship is made after the July M.B. examination.

II. SCHOLARSHIPS

UNIVERSITY SCHOLARSHIPS

At least one University Scholarship, value £25, is offered annually on the results of the Final examination in each of the various Honours Schools in the Faculties of Arts and Science, and at least one Scholarship is offered on the results of the Second examination for the degrees of M.B. and Ch.B.

University Scholarships are awarded in the Faculties of Arts and Science only to candidates who have been placed in the First Class and have also been reported by the examiners as showing special merit.

Candidates for the Scholarship in Medicine must pass in Materia Medica and Pharmacy in July, and in Anatomy and Physiology in the following March, or in all the subjects in March.

A University Scholarship is not tenable in conjunction with any other Scholarship of Victoria University, or with a Fellowship of Victoria University.

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University Scholars

1892	Barnett, Lionel David	*Classics*
	Porter, Ralph Classon	*Engineering*
	Titherley, Arthur Walsh	*Chemistry*
1893	Muir, John Ramsay Bryce	*History*
1894	Smith, Frank Wagstaff	*Physics*
	Clubb, Joseph Albert	*Zoology*
1895	Broadbent, Ellinor Lucy	*History*
	Brown, William Lowe	*Engineering*
	Thornton, William Mundell	*Physics*
1896	Caspari, William Augustus	*Chemistry*
1897	Wooll, Edward	*Classics*
	Riddlesworth, William Henry	*Engineering*
	Jackson, Arthur Randall	*Zoology*
	Burnet, Robert	*Botany*
1898	Hewitt, Francis William	*Engineering*
1899	Macgregor, John Marshall	*Classics*
	Humfrey, John Charles Willis	*Engineering*
	Auld, Helen Park	*Botany*
1900	Christian, Alexander Gladstone	*Medicine*
	Bell, John Johnston	*History*

DERBY SCHOLARSHIPS

The Derby Scholarships, for the encouragement of the study of Mathematics, are two in number, of the value of about £35 a year, and tenable for two years; one is offered in each year for proficiency in Pure and Applied Mathematics.

The examination for the Scholarship is the Final examination for the B.Sc. degree with Honours in the School of Mathematics, and the competition is open to all candidates for Honours in the said School.

The holder of a Derby Scholarship is allowed to expend any portion of the annual income of his Scholarship on books to be bound and stamped with the University Arms.

Scholars

1893	Carson, George Edward St. Lawrence
1897	Forber, Edward Rodolph *(Exhib.)*
1900	Gabbatt, John Percy

JOHN BRIGHT SCHOLARSHIP

The John Bright Scholarship is awarded biennially for a book or essay on some subject directly connected with the study of English Literature. It consists of £100, and is

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payable in money to the successful candidate, who is at liberty to expend any portion of it, not exceeding £20, in books stamped with the arms of the University. The University may, if it think fit, publish the book or essay.

Should no award be made on any occasion, the Scholarship is open to competition in the year following.

The candidates for the Scholarship must be persons who have obtained the degree of B.A. in the University, and who have not completed more than two years from the date of the examination qualifying them for the B.A. degree, provided that all candidates have attended in a College of the University at least one year's full course in the subject of English Literature.

MERCER SCHOLARSHIP

The Mercer Scholarship, of the value of about £30, and tenable for one year, is offered annually for proficiency in Chemistry.

The examination for the Scholarship is the Final examination for the degree of B.Sc. with Honours in the School of Chemistry, and the competition is open to all candidates for Honours in the said School.

The holder of a Mercer Scholarship is allowed to expend any portion of the income of his Scholarship on books, to be bound and stamped with the University Arms.

Scholars

1892 Fryer, Arthur Frederick
1897 Farmer, Robert Crosbie

Prizeman

1891 Carey, Arthur

THE GILCHRIST SCHOLARSHIP

A Gilchrist Scholarship, of the value of £50 a year for three years, tenable in the Owens College, Manchester, or in University College, Liverpool, or in Yorkshire College, Leeds, is annually awarded under the Gilchrist Educational Trust.

The Scholarship is awarded to the duly qualified competitor who stands highest at the June Preliminary examination

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of the Victoria University, provided that he passes in the First Division.

The age of the competitor, on the 1st day of July in the year of competition, must not exceed eighteen years. A certificate of age must be presented before election to the Scholarship.

If no award is made at the June examination, the Scholarship is open to competition under the same conditions at the next ensuing (Autumn) Preliminary examination.

Every Scholar must attend in each year in one of the Colleges of the Victoria University one of the courses approved by the University for an ordinary degree or for a degree with Honours; provided that a Scholar who has taken his degree at the end of the second year of tenure may, with the permission of the authorities of the College, spend the third year of tenure at some College not connected with the Victoria University.

Every Scholar must present to the Secretary of the Gilchrist Educational Trust, 17 Victoria Street, Westminster, S.W., on his applying for each half-yearly instalment of his Scholarship (which will be payable on the 1st of January and the 1st of July), a certificate from the Principal of his College that his conduct has been good, that he has acquitted himself with credit at the examinations required of him by his College, and that he is pursuing his studies in a manner satisfactory to the Principal, with a view to graduation in the Victoria University, in one of the following Faculties:—Arts, Law, Science, or Medicine. In default of such certificate, the Trustee shall have the power to withhold at discretion any unpaid instalment or instalments of the Scholarship.

Every Scholar, if a candidate for an ordinary degree, is required to present himself at the Intermediate examination in one of the above named Faculties of the Victoria University, at an interval of not more than two academical years from his election, or, if a candidate for a degree with Honours, at the Final examination, at an interval of not more than three academical years from his election, unless excused from doing so by the Gilchrist Trustees on the recommendation of the Principal of his College; and if he do not so present himself (unless by permission of the Trustees as aforesaid), or if he fail

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to pass the examination, he will be considered as having forfeited his claim to the remaining instalment or instalments of his Scholarship.

These Scholarships are open to women on the same conditions as to men; but no student by virtue of being elected to a Scholarship is thereby entitled to enter on any course of study or to attend any classes in any College to which he or she would not otherwise be admissible under the regulations of that College.

1888	Davies, Samuel Henry
1893	Caspari, William Augustus
1895	Band, Stephen
	Forber, Edward Rodolph
1896	MacGregor, John Marshall
1898	Owen, Gwilym
1900	Mercer, James

GILCHRIST TRAVELLING STUDENTSHIP

This Studentship, of the value of £80 (of which £10 is retained by the University for the purpose of printing the report of the Student, if considered of sufficient merit), is awarded annually by the Gilchrist Trustees to candidates proposing to engage in teaching in Secondary Schools.

The competition is limited to graduates of the Victoria University of not more than four years' standing from the dat of the first degree.

Candidates, if not already engaged in teaching, are required to make a declaration that they intend to devote themselves to the work of Secondary Instruction, and that they apply for the Studentship with that end in view. They are expected, when applying for the Studentship, to state what educational system they propose to study abroad, or into what educational problem they propose to enquire.

Every Student is required to specify the amount of time (in no case less than three months) which he is prepared to devote to the selected field of study.

There is no examination for the Studentship, but it is awarded by a Standing Committee after consideration of the claims of the various candidates.

In awarding the Studentship special weight is attached to educational training and experience.

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The Student is required to present a statement as to the progress of his work before the end of the first half-year and a report upon his work as a whole within two months after the termination of his tenure of the Studentship.

The report is published by the University if considered of sufficient merit.

The successful candidate receives a payment of £35 at the commencement of his tenure of the Studentship, and, subject to the statement presented by him having proved satisfactory to the Standing Committee, a second payment of £35, at the commencement of the second half-year of his tenure.

Candidates must send in their names to the University Registrar not later than April 24.

1896 Auld, Margaret Downes.

THE WILLIAM SUMMERS SCHOLARSHIP

A William Summers Scholarship, worth about £40, and tenable for three years, is awarded every three years on the results of the June Preliminary examination of the University in the following subjects :—

(1) English Language and English History.
(2) Mathematics.
(3) (4) (5) *Three* of the following :
i. Greek.
ii. Latin.
iii. French.
iv. German.

Candidates for the Scholarship must have been resident in the Parliamentary Borough of Huddersfield during one full year previous to the 1st of June of the year in which they compete, or must have attended a Public School in the said Borough for the same period.

The successful candidate is required to pursue in a College of the University a regular course of study in one of the following Honours Schools : (1) Classics, (2) History, (3) English Language and Literature, (4) Philosophy, (5) Mathematics, or any other Honours School in the Faculty of Arts approved by the Council.

Such course must be commenced in the October next after election to the Scholarship, and the Scholar is required to

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produce at the close of each year of tenure a certificate from the Principal of the College to the effect that the course of study has been satisfactorily pursued.

UNIVERSITY ENTRANCE SCHOLARSHIPS

Three Scholarships, each of the value of £30 a year for three years, tenable at one of the Colleges of the University, are awarded annually under the following regulations :—

The Scholarships are awarded to the duly qualified competitors who stand highest at the Preliminary examination held for the purpose of examining forms or classes in schools, provided that they pass in the First Division, and are recommended by the examiners.

The age of the competitors on the 15th day of July, in the year of competition, must not exceed eighteen years.

Every Scholar shall attend in each year, in one of the Colleges of the University, one of the courses approved by the University for a degree.

Every Scholar shall transmit to the Registrar of the University, before the 1st of July in each of the two years succeeding his election, a certificate from the Principal of his College to the effect that his conduct has been good, and that he is pursuing his studies in a satisfactory manner. In default of such a certificate, the Board of Studies shall have the power to withhold any unpaid instalments of the Scholarship.

In the case of students holding other Scholarships or Exhibitions the University reserves power to withhold payment of any Scholarship, either in whole or in part.

III. PRIZES

GOLD MEDAL IN CONNECTION WITH DISSERTATIONS FOR THE DEGREE OF M.D.

A Gold Medal is awarded for a Dissertation for the degree of M.D. reported by the Departmental Board of Medicine to be distinguished by marked originality and special excellence.

1889 Buchanan, Robert John McLean
1893 Chalmers, Albert John
1899 Annett, Henry Edward

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LEBLANC PRIZE

The prize, consisting of a Bronze Medal, is awarded to the candidate in the Final examination for the degree of B.Sc. with Honours in the School of Chemistry, who, having been placed in the first or second class, is recommended by the examiners for distinction in Technological Chemistry or Metallurgy.

1891 Carey, Arthur
1896 Caspari, William Augustus
1900 Ludlam, Ernest Bowman

COBDEN PRIZE

A prize, now of the value of £20, together with a Silver Medal, is awarded once in three years.

The prize is awarded for an Essay on some subject connected with Political Economy, and is payable in money to the successful candidate.

The candidates for the prize must be members of the University who, having passed the Preliminary examination, or some other examination for a degree, are not of more than six years' standing from matriculation on the first day of the Easter Term of the academical year in which the subject is announced.

Each Essay must bear a motto, and be accompanied by a sealed envelope bearing the same motto, and containing the name, college, and address of the writer.

The next competition will be held in 1903.

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UNIVERSITY COLLEGE FELLOWSHIPS, SCHOLARSHIPS, STUDENTSHIPS, AND PRIZES

FELLOWSHIPS

1. HOLT FELLOWSHIPS IN PHYSIOLOGY AND PATHOLOGY

Presented to the Medical Faculty by Mr. George Holt in 1886 for distribution during the ten succeeding years, and renewed for a further period by Mrs. and Miss Holt.

1886	A. W. Collins
	J. E. Gemmell
1887	Randle Leigh
	W. Thelwall Thomas
1888	R. J. M. Buchanan
	C. L. Williams
1889	G. W. Chaster
	J. Gould
1890	A. J. Chalmers
	W. E. Livsey
1891	A. J. Wallace
	J. S. McDonald
1892	F. J. Woods
	J. Evans
1893	J. P. Nixon
	J. Unsworth
1894	H. E. Annett
	A. G. Gullan
1895	S. R. Christophers
	J. Hay
1896	H. M. Crake
	E. E. Laslett
	J. Prentice
1897	J. H. Watson
	J. E. Dutton
1898	A. P. Hope Simpson
	P. Nelson
1899	R. J. Ewart
	E. E. Glynn
1900	E. E. Glynn

2. ROBERT GEE FELLOWSHIP IN HUMAN ANATOMY

In the year 1897, by the will of Mrs. Gee, widow of Dr. R. Gee, a former Lecturer in the Medical Faculty, the College, as residuary legatee, received a bequest amounting to £7,069 13s. 6d. The legacy was assigned

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for the benefit of the Medical Department by the creation of a Fellowship in Anatomy, and Entrance Scholarships.

The following are the regulations for the Holt and Gee Fellowships :—

1. The value of each Fellowship shall be £100, tenable for a single year, and payable in three instalments, in the Autumn, Lent, and Summer Terms respectively.

2. The Fellow shall be required to devote his time to (*a*) teaching, (*b*) private study or research in the department of the Medical School to which he is attached, under direction of the Professor. The hours occupied in teaching shall be at that time of the day when the Fellow will be of most use to the department.

3. If the attendance or work of the Fellow has not been satisfactory in the opinion of the Faculty during the first term, he shall forfeit the second and third instalments; if unsatisfactory during the second term, he shall forfeit the third instalment.

4. The Fellowship shall be open to all Senior students who have studied in the Medical Department of the College not less than two years, and possess a Medical Degree or Qualification.

5. Candidates shall send in applications, not later than May 31, to the Dean of the Medical Faculty, stating their qualifications and claims, and the Fellowship shall be awarded before the end of the Summer Session.

6. The election shall, as a rule, be decided by vote of the Faculty upon the merits of the candidates on report from the Professors of Physiology, Pathology, and Anatomy; but, in the event of claims appearing to be very evenly balanced, the Faculty shall be at liberty to require selected candidates to undergo an examination, written or *vivâ voce*.

7. In making their selection, the Faculty will consider previous successes, aptitude for research, capacity for teaching, and all other circumstances by which the objects aimed at in the foundation of the Fellowship may best be fulfilled.

8. No candidate shall hold a Fellowship in the same subject for two years consecutively, except under special

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circumstances, and under no circumstances shall the Fellowship be held for more than two years.

1897 W. Graham
1898 F. T. Lovegrove
1899 G. C. Walker
1900 J. L. Dimond

3. ALEXANDER FELLOWSHIP IN PATHOLOGY

Founded in 1899 for a period of five years by Dr. W. Alexander, and intended mainly for the purpose of original investigation in Pathology.

The regulations are as follows :—

1. The Fellowship is of the value of £100 per annum, tenable for one year, and the holder is eligible for re-election.

2. The holder must be qualified, and must devote his whole time to the duties of the Fellowship in the Thompson Yates Laboratories, under the direction of Dr. Alexander and the Professor of Pathology.

3. The holder is required (*a*) to investigate for himself some selected subject in Pathology ; (*b*) to assist Dr. Alexander in Pathological Research ; (*c*) to examine Pathological material from the Workhouse Infirmary and the Home for Epilepsy.

4. The election is made by the Medical Faculty on the nomination of Dr. Alexander and the Professor of Pathology. Names of candidates, along with a statement of their qualifications, must be sent in writing to the Dean of the Medical Faculty by May 31, 1901.

1899 A. S. Griffith
1900 A. S. Griffith

4. COLONIAL FELLOWSHIP IN PATHOLOGY AND BACTERIOLOGY

Founded in the year 1900, for a period of five years, by Mr. W. Johnston.

The regulations are as follows :—

1. The Fellowship shall be called the Johnston Colonial Fellowship in Pathology and Bacteriology. The value of the Fellowship shall be £100 a year, payable in three instalments at the beginning of the Autumn, Lent, and Summer Terms.

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2. The Fellowship shall be open to members of Colonial Universities and Medical Schools in the first place, without, however, absolutely precluding Colonials who may possess British qualifications.

3. The Fellow shall be elected by the Faculty, on the nomination of the Professor of Pathology.

4. The Fellow shall be elected for one year, and shall be eligible for re-election.

5. The Fellow shall devote himself to Research in Pathology and Bacteriology under the direction of the Professor of Pathology. He shall also assist in the teaching of these subjects for a length of time not exceeding six hours a week. He shall undertake no work which shall in any way interfere with these duties.

6. The work shall be done in the Thompson Yates Laboratories of University College ; but, by special permission from the Faculty, the Fellow may be allowed to follow his investigations elsewhere.

7. The expenses of any research shall be met out of the funds of the Laboratory, under the direction of the Professor of Pathology.

SCHOLARSHIPS

I. ENTRANCE SCHOLARSHIPS

(Awarded on the results of the Entrance Scholarship Examination in May, see pp. 18-22*)*

1. BIBBY SCHOLARSHIPS

Founded in the year 1882, by Mr. John Bibby, of Liverpool, shipowner, with a capital endowment of £1,000.

The Scholarships, two in number, each of the annual value of £20, and tenable for three years, are open to all competitors of not more than 18 years of age on the 1st of October following the date of examination.

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The holder is required to proceed to a Victoria University degree in Arts, Science, or Law.

1882	Thomas H. Cariss	1891	Arthur E. Ewart
1883	Richard H. Carlisle	1892	William M. Hooton
1885	Alfred E. Livesey	1893	William Trantom
1886	William Roberts	1895	Charles G. Barkla
1887	Joseph Sumner	1897	Oswald Clement
1888	Lewis P. Anderson	1898	Hester W. Ainslie
1889	Lionel D. Barnett	1900	Thomas N. Riley
1890	Leon Zagury		

2. MORRIS RANGER SCHOLARSHIPS

Founded in the year 1882, by Mr. Morris Ranger, of Liverpool, cotton broker, with a capital endowment of £1,000.

The Scholarships are two in number, each of the annual value of £20, tenable for two years, and open to all competitors irrespective of age.

The holder is required to proceed to a Victoria University degree in Arts, Science, or Law.

1882	Hugh L. Parry	1892	Augusta C. Pearce
1883	James L. Howard	1893	William N. Fraser
1886	Mary Burn	1894	Ernest Brown
	Ellen K. McConnell	1895	Harold S. Bally
1887	Edward Mather	1896	John C. W. Humfrey
1888	Joseph Unsworth	1898	John C. Haworth
1889	Ralph C. Porter	1899	Constance M. Bott
1890	Andrew M. Ker		Francis D. M. Barker
1891	Thomas H. Creighton	1900	Janet M. Dale

3. CHRISTOPHER BUSHELL SCHOLARSHIP

In the year 1885 personal friends and admirers of the late Mr. Christopher Bushell, one of the two first Vice-Presidents of University College, raised a testimonial fund in recognition of the great services rendered by Mr. Bushell to the cause of education in Liverpool. The fund was primarily expended upon a full length statue of Mr. Bushell, executed by Mr. Bruce Joy, which now stands in the Entrance Hall of the College. The residue of the fund, amounting to £1,088 3s. 5d., was devoted to the endowment of an Entrance Scholarship.

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The Scholarship, which is of the annual value of £40, and tenable for three years, is open to youths of not more than 18 years of age on the 1st of October following the examination.

The holder is required to proceed to a University degree.

1885	Jesse A. Twemlow	1894	William T. Bradley
1886	Edward Spencer	1897	Edwin G. Warry
1891	William E. McClure	1900	James Mercer

4. LADIES' EDUCATIONAL ASSOCIATION SCHOLARSHIP

In the year 1885 the Ladies' Educational Association of Liverpool subscribed a sum of £90 for the purpose of providing a Scholarship, of the annual value of £30, for three years, for the support of a lady student at University College. In 1888, 1891, 1894, and in 1899, the Association provided similar Scholarships of the value of £25 for three years.

The Scholarship is open to candidates of not more than 19 years of age on the 1st of October following the date of examination, preference being given to those educated in recognized schools in Liverpool, Birkenhead, or the suburbs. The holder is required to proceed to a University degree.

1885	Elizabeth J. Owens	1895	Ethel T. McKnight
1889	Mary Barrett	1899	Florence L. Williams
1892	Elsie K. Foster		

5. ELIZABETH JAMES SCHOLARSHIP

Founded in the year 1886, by Mrs. James, with a capital endowment of £1,000.

The Scholarship, which is of the annual value of £40 and tenable for three years, is open to candidates of either sex, without limit of age.

The holder is required to proceed to a Victoria University degree in Arts or Law.

1887	Sarah B. Williams	1895	Cedric M. Imlach
1892	Mary Honeyburne	1898	John L. Ratcliffe

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6. EDWARD RATHBONE MEMORIAL SCHOLARSHIP

In the year 1886 several friends of the late Mr. Edward Rathbone, desirous of perpetuating his name and memory in Liverpool, raised a fund amounting to £702 17s. 6d., from the proceeds of which an Entrance Scholarship was founded, bearing the name of Edward Rathbone, for the promotion of higher education among youths entering upon a commercial or business career.

The Scholarship is of the annual value of £25, tenable for two years, and open to youths of not more than 18 years of age on the 1st of October following the date of examination.

The holder is required to make a formal declaration of his intention to adopt a commercial career, and to proceed to a University degree or the curriculum of the School of Commerce.

1887	Alexander Johnstone	1898	Louis A. Macdonald
1891	Richard E. Kenyon	1899	Edward Fraser
1893	Percy G. Wilson		

7. COMMERCIAL SCHOLARSHIP

In the year 1887 Mr. W. Rathbone, M.P., and Mr. Ashton Rathbone, acting conjointly as trustees of certain funds left at their disposal by the late Mr. Edward Rathbone, announced their desire to employ a part of these funds in the endowment of a *Commercial Scholarship*, and for this purpose placed at the disposal of the Council a sum of £1,000, with which a trust was created in accordance with the aims and wishes of the founders.

The Scholarship is of the annual value of £35, tenable for two years, and open to youths of not more than 18 years of age on the 1st of October following the date of examination.

The conditions of tenure are the same as in the case of the Edward Rathbone Memorial Scholarship.

1888	Ernest J. Walker	1898	Gladstone W. Worrall
1891	Leonard Lackland		Thomas Campbell
1895	John M. McGregor	1899	Gerald L. Harbottle
1896	William E. Burnley		Walter Tattersall

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8. TATE TECHNICAL SCIENCE SCHOLARSHIPS

In the year 1890 Mr. Henry Tate invested the sum of £1,000 by way of terminable annuity, yielding £100 for twelve and a half years, for the creation of Technical Science Scholarships, tenable at University College.

The following are the regulations :—

1. The annual income of £100 shall be employed for the creation of three Scholarships of the value of £35, £35, and £30 respectively, one of which shall be offered for competition each year.

2. The Scholarships shall be open to male candidates without limit of age.

3. The Scholar shall be required to proceed to a University degree in Science, having for a subject Physics, Engineering, or Chemistry, or to some form of technological curriculum approved by the Senate.

4. The Scholarships shall be tenable for three years, subject to the usual conditions of industry and good behaviour.

5. The subjects of examination shall be English Composition, Mathematics, Mechanics, Physics, and Chemistry; but for any paper, except that in English Composition, the candidate shall be allowed to substitute a special optional paper in Applied Mechanics with Drawing.

1891	Frank W. Smith	1895	Francis W. Hewitt
1892	William M. Thornton	1898	William Alex. Whitton
1893	William A. Caspari	1899	Richard H. Albery
1894	Charles H. Stewart	1899	Frederick J. Brislee
	Edwin J. W. Harvey	1900	Douglas C. Eva

9. THOMAS HORNBY SCHOLARSHIP

In the year 1891 Miss Mary Louisa Hornby placed in the hands of the Treasurer of the College, upon trust, the sum of £500, for the foundation of a Scholarship in memory of her father, the late Reverend Thomas Hornby, of Liverpool, for forty-five years Vicar of St. Mary's, Walton-on-the-Hill.

The Scholarship is of the net value of £20, tenable for three years, and open to candidates of either sex without limit of age. It is awarded upon the results of the Greek papers.

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The Trust Deed provides that—

1. The Fund shall be called '*The Thomas Hornby Scholarship Fund.*'

2. The income of the fund shall be applied in the encouragement or assistance, by means of a Scholarship, to be called the *Thomas Hornby Scholarship*, of persons pursuing or about to pursue in University College the study of the Greek language.

3. The Scholar shall be connected with the city of Liverpool by birth, or shall have resided for a period of not less than three years in the city, or on the north-east side of the river Mersey, within a radius of ten miles from the Liverpool Town Hall.

4. In awarding the Scholarship, preference shall at all times be given to persons of limited means.

1892	John A. M. Trietschel	1898	Gertrude H. Barrett
1896	Eva C. Postance		

10. PICKUP SCHOLARSHIPS

Mr. James Pickup, of Southport, who died 19th November, 1891, made a bequest to the Governors of University College, by his will dated 10th June, 1891, as follows:—

'That the sum of £1,000 be paid to the Governors of University College, Liverpool, to be invested by them for the benefit of sons, born in Lancashire, of *bona fide* working men.

'That the interest thereon shall be awarded annually (in two equal sums), under the name of the *Pickup Scholarships*, and paid to the best scholars, not under sixteen years of age nor above twenty-one years at the time of examination who shall have previously attended the Evening Classes, or some of them, under the Walker Engineering Laboratories' Scholarship Fund.

'That the highest candidate at any examination for any such Scholarship shall have reached a standard of proficiency considered satisfactory by the College authorities for the time being.

'That the holder of any such Scholarship shall take such practical and theoretical courses in the Engineering Department of University College as shall be from time to time prescribed by the College authorities.'

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Candidates for the Pickup Scholarships must forward a list of the results of the last Science and Art Department Examinations to the College Secretary on or before May 1.

1899 John H. Sinclair

11. CITY COUNCIL SCHOLARSHIPS

Founded by the City Council of Liverpool, in 1892.

The Scholarships, five in number, each of the annual value of £30, and tenable for two or three years (according to the curriculum selected), are confined to candidates resident within the city area, who are not over 19 years of age at the date of examination, and whose parents have an income not exceeding £250 per annum.

To each Scholarship is attached a Free Studentship, entitling the holder to attend all Lectures and Laboratory Courses comprised in the University course or technological curriculum approved by the Senate, upon payment of the College registration fee. The cost of books, instruments, materials, and special apparatus is defrayed by the student.

The Scholarships are awarded upon the results of the papers in English Composition, Mathematics, Mechanics, Physics, Chemistry, and Applied Mechanics with Drawing.

1893	Thomas B. Bailfie	1897	John P. Gabbatt
	James H. Ball		Albert J. Smith
	William H. Roberts		John H. Thwaites
	John S. Smythe		Olive O. Hooper
	Alfred E. Worgan		John Bibby
1894	Paul S. Couldrey		Henry W. Brownsdon
	Edward R. Forber	1898	Frank T. Ellis
	Peter Gaulter		Henry Farrington
	Frank K. Hyde		Percival H. Powell
	Lawrence C. McNair		Frank Rogers
1895	Robert E. Kelly		James F. Spencer
	Edward C. Lester		William E. Curnock
	William L. Parry		Edward Fitzgerald
	Samuel Slefrig	1899	Robert B. Foster
	Francis A. Callaghan		Harold F. Haworth
1896	Thomas F. Connolly		Joseph Pearson
	Charles J. Callaghan		John A. Davenport
	Robert E. Boulton		Harold E. Morrow
	Francis C. Pugh	1900	George Holme
	William H. Griffiths		Allan Morton
1897	Robert R. Cormack		James Joseph Quirk
	Stafford Fry		Thomas F. Wall

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12. SIR RICHARD MOON SCHOLARSHIPS

In the year 1892 Sir Richard Moon, Bart., late Chairman of the London and North Western Railway Co.) transferred to the Council of the University College a sum of £2,000, L. and N. W. Ry. 4 per cent. Debenture Stock, in order to found a Scholarship Fund. In accordance with the terms of the trust, the proceeds of the fund are to be used for Scholarships, Exhibitions, or Prizes, to be awarded to young men employed in the London and North Western Railway Company's works.

The following are the regulations :—

1. That the tenure of the Scholarship be for two years.

2. That the value of the Scholarship be £80 a year.

3. That the age of the competitors for the Scholarship be not less than 16 and not more than 22 years on the day appointed for the commencement of the examination.

4. That the candidates must have been employed by the London and North Western Railway Company at the Locomotive Works at Crewe, the Earlestown Wagon Works, the Wolverton Carriage Works, or some other of the Company's Works for a period of at least twelve calendar months continuously before the date of commencement of the examination.

5. Every selected Scholar must employ himself either wholly in the prosecution of his studies at the College, or, for a part of the term, with the approval of the Senate, in some manufacturing workshop or institution, in such a way as will conduce to his advancement in the science or practice of Engineering.

6. That the Sir Richard Moon Scholarships be awarded upon the results of the Science and Arts Department examinations in the same subjects and on the same scale of marks as those adopted for the Whitworth Scholarships.

7. That in all cases where it is proved to the satisfaction of the Senate that the circumstances of the Scholar justify a remission of the ordinary College fees, the Scholar shall be admitted to the complete Mechanical Engineering course at a composition fee (inclusive of registration) of £20 per session.

8. Candidates for the Scholarships are requested to forward a list of the results of the Science and Art Department

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examinations to the Professor of Engineering, University College, Liverpool, before September 1.

1892	Walter G. Tunnicliffe	1895	Frank H. Phillips
1893	John W. Roebuck	1897	William Bayliss
1899	Frederick Charlesworth		

13. DERBY SCHOLARSHIPS

The Right Hon. the Earl of Derby, K.G., first President of the College, who died in April, 1893, bequeathed to the College a sum of £2,000 for the permanent endowment of Scholarships or Exhibitions.

The following are the regulations :—

1. The Scholarships shall be offered as two Entrance Scholarships, each of the value of £35 for three years, and shall be awarded on the results of the Entrance Scholarship examination in Arts subjects, including Mathematics.

2. One of the Scholarships shall be offered without limit of age, the other to candidates of not more than 18 years of age on the 1st of October following the examination.

3. The holder of a Derby Scholarship shall be required to read for the degree of Bachelor of Arts, or Bachelor of Science with Honours in Mathematics, in Victoria University.

1894	Irene Burn	1897	Richard A. Mannings
	Edward Wooll		Florence H. Walton
1900	Charles H. Brown		

14. SIR E. HARLAND MEMORIAL SCHOLARSHIP

In the year 1895, the Oceanic Steam Navigation Co., Limited, commonly known as the White Star Line, placed in the hands of the Treasurer of the College, upon trust, the sum of £2,000 for the foundation of a Scholarship to perpetuate the name and memory of the late Sir Edward J. Harland, M.P., of Belfast.

The Trust Deed provides that the income of the fund shall be applied in the encouragement or assistance, by means of a Scholarship to be called the *Sir Edward Harland Memorial Scholarship*, of persons pursuing, or about to pursue, the studies of Marine Engineering and Naval Architecture, or one of such studies, in University College.

The following are the regulations :—

1. The tenure of the Scholarship shall be for two years.

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2. The value of the Scholarship shall consist of the income arising from the endowment fund (£2,000).

3. The age of competitors for the Scholarship shall be not less than 16 and not more than 22 years on the day appointed for the commencement of the examination.

4. The Scholarship shall be open to those only who have been employed for not less than twelve months (prior to the date of examination) in Engineering shops or Shipbuilding yards in the city or suburbs of Liverpool or Birkenhead.

5. Every Scholar will be required to attend in the College a course of Engineering previously approved by the Senate of the College.

6. The Scholarship shall be awarded upon the results of the Science and Art Department examinations in the same subjects and on the same scale of marks as those adopted for the Whitworth Scholarships.

7. The Scholar shall be admitted to a complete Engineering course at a composition fee of £30 for the session.

8. Every candidate for the Scholarship must declare his intention of entering for the Scholarship on or before the date fixed for the commencement of the Science and Art Department examinations, upon which the Scholarship is awarded.

1896 Robert Nelson

15. DAVID GAMBLE SCHOLARSHIP

Founded in the year 1890 by Sir David Gamble, C.B., for Scholars from Cowley Schools, St. Helens.

1. The Scholarship, which is of the annual value of £40, and tenable for three years, is open to candidates who have for a period of not less than two years been pupils of Cowley School, St. Helens, and who are not over 18 years of age on the 1st of October following the examination.

2. The holder of the Scholarship is required to proceed to a Victoria University Degree in Arts, or Science, or Medicine.

1891 William E. M'Clure	1897 Not awarded
1894 Ernest Brown	1899 Peter Hewitt

16. GOSSAGE SCHOLARSHIP

In the year 1893 Mr. Frederick Herbert Gossage, of Widnes, transferred to University College the sum of

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£2,526 16s. 9d., 2¾ per cent. Consolidated Stock, for the foundation of a Scholarship.

The Trust Deed provides that—

1. The fund shall be called the Gossage Scholarship Fund.

2. The income of the Fund shall be applied in the encouragement or assistance, by means of an Entrance Scholarship to be called the *Gossage Scholarship*, of male or female students, wholly or partially educated in the borough of Widnes, who are desirous of pursuing their studies in University College with a view to obtaining a Victoria University Degree.

3. The Scholarship shall be tenable for three years.

4. Candidates shall be under 17 years of age at the date of examination.

5. Candidates must have been pupils in the Farnworth Grammar School, or in some other school in the borough of Widnes, for at least two out of the three years next preceding the examination for the Scholarship.

6. If, in the opinion of the Examiners, two or more candidates shall be equal, preference shall be given to candidates who have been pupils in the Farnworth Grammar School.

7. The elected Scholar shall proceed to a Victoria University degree.

1893 Charles R. Lewis	1899 Douglas E. Hunter
1896 Ernest L. Hunter	

17. LUNDIE MEMORIAL SCHOLARSHIP

Founded in 1896 in memory of the late Rev. Robert H. Lundie, M.A., D.D., of Liverpool.

A Lundie Scholarship will be awarded in the summer of 1901, subject to the following regulations :—

1. The Scholarship will be of the annual value of not less than £15, and will be tenable for three years.

2. The competition will be open, without distinction of sex, *(a)* to all Pupil Teachers, in Schools within the boundaries of the city, who pass the Queen's Scholarship examination of December, 1900, with the intention of entering upon training as Elementary Teachers ; and *(b)* to all students who have, within three years immediately preceding the examination,

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attended an Evening Continuation School within the like boundaries, for at least one complete session in the specific subject ('The Life and Duties of the Citizen') with which the Scholarship is especially connected, or in the subject of English History.

3. The Scholarship will be awarded on the results of an examination in the following subjects :—

(a) The Life and Duties of the Citizen, as defined in the Evening Continuation School Code.

(b) English History, particularly in its Social aspects.

(c) Elementary Political Economy.

4. The holder of the Scholarship shall proceed either to *(a)* the recognized course of training in the University Day Training College, the Edge Hill Training College, or the Liverpool Training College, or to *(b)* some other approved course of systematic training at University College, Liverpool, for a degree in Arts, Science, or Law.

5. The Trustees reserve the right not to award the Scholarship in the event of the papers being of insufficient merit, or to withhold same on receiving an unsatisfactory report from the Principal of the College attended by the Scholar as to the latter's diligence in his or her studies.

The examination will be held at University College, on the last Saturday in June, 1901, from 9.30 to 12.30, and from 2 to 5.

*** Candidates are required to send in their names to A. T. Davies, Esq., Solicitor, 41 North John Street, Liverpool, and at the same time to enclose a statement showing *(a)* the course of training to which they mean to proceed in the event of being elected to the Scholarship, *(b)* the School or Schools in which they have been Pupil Teachers, and *(c)* their place in the Queen's Scholarship List, *or* the Evening Continuation Classes which they have attended, with the number of their attendances, together with *(d)* a certificate of good character and conduct from a Principal Teacher, Secretary of a Board of Managers, or Employer.

1897 Charles F. Lumby | 1899 Annie E. W. Taylor

18. ROBERT GEE ENTRANCE SCHOLARSHIP

(For Medical Students.)

In the year 1897, by the will of Mrs. Gee, widow of Dr. R. Gee, a former Lecturer in the Medical Faculty,

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the College, as residuary legatee, received a bequest amounting to £7,069 13s. 6d. The legacy was assigned for the benefit of the Medical Department by the creation of a Robert Gee Fellowship in Anatomy, and four Entrance Scholarships.

The following are the regulations for the Scholarships :—

1. Four Scholarships of the value of £25 each for one year are offered for competition annually.

2. The subjects of examination shall be selected by the candidate from Greek, Latin, French, German, English Essay, Mathematics, Mechanics, Physics, Chemistry, Biology (including Zoology and Botany).

3. The Scholarships are open only to male students, and to those who have not attended Day Classes in University College.

4. The successful candidates are required to register as Medical Students at the beginning of the next session, and to attend the classes required for the first year's study for a Medical degree of the Victoria University, and to pay the necessary composition fee.

1898 Hubert G. Thompson | 1900 Bertram T. J. Glover

II. STUDENTSHIPS

Founded in the year 1886 by the Senate and Council of the College.

The following are the regulations :—

1. College Studentships are open on the same footing to male and female candidates, who are not *less* than 18 years of age on the 1st of October next following the time of examination ; but no person who is, or has been, a registered student of the College for more than one term at any time during the three years preceding the examination is eligible for a College Studentship.

2. It is intended that the intellectual standard required for attaining a College Studentship shall not be inferior to that required for a College Scholarship.

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3. Every applicant for a College Studentship must, in the first instance, make a full statement to the Principal of the special circumstances constituting a claim to receive such Studentship, and will not be allowed to enter for the examination without the permission of the Senate.

4. Every such Student will have the privilege of attending all Day Classes held in the College *except those of the Medical Department*, or of working in the College Laboratories under the same restrictions as ordinary students, upon the payment of a commutation lecture fee of £5, together with a £1 registration fee.

A College Studentship is tenable for one year, but is renewable every year for a term not exceeding three years, at the discretion of the Senate.

6. Every such Student is required to proceed to a Victoria University degree.

7. The Senate has power to recommend for a College Studentship, without examination, any Scholar who, upon the lapse of a College Scholarship, has not yet reached the end of his or her University course.

1886	Sarah Birch
1887	Mary Armstrong
	Sarah B. Melhuish
	May Ryan
	Ethel L. Macpherson
1888	Stephen Thetford
	Edith M. Ewart
1889	Joseph Sumner
1890	Arthur J. Williams
1891	Dora L. Sandford
1892	Mary C. Collins
	Frederick S. Hughes
1893	Annie W. Raymond
	Harold E. Williams
1894	Catherine Auld
	Maud E. Harnden
	Alice C. Hooper
	Catherine J. Maule
	Isabel Sheriff
1895	Sarah Burman
1896	Charlotte A. Brash
	Louisa C. Brew
	Mary H. Greaves
	Frederick O'Brien
	Agnes W. Parr
1896	Blanche E. Ross
1897	Lilian E. Auld
	Cleonike C. Paschali
	Hilda M. Philips
1898	Gertrude B. Buck
	William E. Burnley
	Constance Herschell
	Helen G. Whitton
1899	Edith M. Blevin
	Grace D. Elias
	Margaret Graham
	George H. B. Judge
	Ernest B. Ludlam
	Lucy E. Shallcross
	Arthur Stead
	H. H. Stephenson
	John Whitton
	Irene F. Williams
	John D. E. Williams
1900	Emily Chisholm
	Mary I. Dale
	Gladys M. Imlach
	Eliza M. Owen
	Gladstone W. Worrall

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III. SCHOLARSHIPS OPEN TO THE COMPETITION OF STUDENTS OF THE COLLEGE ONLY

1. CHARLES BEARD RESEARCH SCHOLARSHIP IN HISTORY

In the year 1888, Mr. Henry Tate being desirous of perpetuating the name and memory of the Reverend Charles Beard, LL.D., one of the founders of University College, set apart a sum of £2,000 for the creation of College Scholarships bearing the name of Charles Beard, to be applied to the advancement of Arts studies more particularly on History.

1. The Scholarship, which is of the value of £45, tenable for one year from the date of election, and open to all students without limit of age, is awarded in the School of History.

2. The Scholar shall pursue historical study and research, upon lines approved by the Professor of History, and may also be called upon by the Senate to take part in the tuition or class teaching of historical students, but not to such an extent as to interfere with private study and research.

3. The Scholar, who is not at liberty to undertake any paid teaching work without the knowledge and express assent of the Senate, will be permitted to attend College lectures, approved by the Professor of History, without charge over and above the College Registration Fee.

4. Candidates for the Scholarship are required to send in their names to the Principal, not later than June 15.

1890	Sarah B. Melhuish	1897	John H. Lumby (*Exhib.*)
1896	John J. Bell (*Exhib.*)	1899	Edith M. Platt (*Exhib.*)
1897	Ellinor L. Broadbent		

2. SHERIDAN MUSPRATT CHEMICAL SCHOLARSHIP AND EXHIBITION

In the year 1885, Mrs. Muspratt placed in the hands of the Treasurer of the College, upon trust, the sum of £1,500 for the foundation of a Scholarship to perpetuate

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the name and memory of her husband, the late Dr. James Sheridan Muspratt.

The Trust Deed provides that—

1. The fund shall be called the *Sheridan Muspratt Scholarship Fund.*

2. The income of the fund shall be applied in the encouragement or assistance, by means of a Scholarship, or Prizes, or Exhibitions, to be called the *Sheridan Muspratt Scholarship*, or *Prizes*, or *Exhibitions*, of persons studying Chemistry in the College, or of persons who, having studied the higher branches of Chemistry in the College, shall desire to prosecute their studies or researches in other Colleges or places of learning.

3. There shall always be one Scholarship of the annual value of at least £50.

The Scholarship is tenable for two years, and is offered for competition in December.

In awarding the Scholarship, strong preference is given to students under 23 years of age on the 1st of January following the examination, though under exceptional circumstances candidates above that age are allowed to compete, provided they first submit to the Senate of the College an account of their previous studies, and a full statement of their objects in competing for the Scholarships, showing a sufficient cause for the relaxation of the restriction as to age.

The Scholarship is awarded mainly upon knowledge of Chemistry, the subjects of examination being—

The Principles of Chemistry.

Chemistry of the Metals and Non-Metals.

Organic Chemistry.

Qualitative Analysis and General Laboratory Work.

Simple Quantitative Analysis.

The examination in these subjects extends over three days, one at least of which is devoted to practical work in the Laboratory.

Candidates who have not taken a University degree are further required to satisfy the examiners in—

1. Physics; especially Heat and Electricity.

2. Mathematics; especially Algebra up to Binomial Theorem and Logarithms.

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3. English Essay.

4. One of the following languages :—Greek, Latin, French, German, Italian. For purposes of Chemical study, candidates are recommended to prepare themselves in German in preference to other languages.

The holder of the Scholarship is required—

1. To work systematically in the College Laboratories.

2. To attend College Classes in the higher branches of Chemistry.

3. Either to proceed to a University degree in Science of which Chemistry forms a principal feature, or to occupy the whole or a greater part of his time in Chemical research, conducted in the College Laboratories under the direction of the Professor of Chemistry, and to the satisfaction of the Senate.

4. To present a half-yearly report, which shall include a statement upon the progress of any branch of Chemical research which he may be undertaking ; and this report will be submitted to the Senate by the Professor of Chemistry, with such remarks as he may think fit. A satisfactory report will be regarded as a condition of the Scholar continuing to hold his Scholarship.

If a second candidate possesses sufficient merit, an Exhibition of £25 may be awarded for one year.

In the event of no candidate of sufficient merit competing for the Scholarship, the Senate is at liberty to withhold the Scholarship, and to make provision for a new examination at such time as may seem expedient, and any income arising from the Scholarship being permitted to remain vacant for a term may be applied in promoting the study of Chemistry, by way of Prizes, Exhibitions, Entrance Scholarships, or otherwise, as the Council shall determine.

Candidates must send in their names to the Principal not later than November 15.

1887	Not awarded
1888	Not awarded
1889	Arthur F. Fryer
1890	James T. Conroy
	Francis E. Francis (*Exhib.*)
1891	Arthur W. Titherley
1892	Not awarded
1893	Not awarded
1894	William M. Hooton
1896	William A. Caspari
1898	John B. Tayler
1899	Henry W. Brownsdon (*Exhib.*)

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3. 1851 EXHIBITION SCHOLARSHIPS

Her Majesty's Commissioners for the Exhibition of 1851, having placed at the disposal of the College the nomination to a Science Scholarship, the Senate will, in April, 1901, nominate to a Scholarship on the following conditions :—

1. The Scholarship is of the value of £150 per annum, and is tenable for two years, subject to satisfactory report upon the progress of the Scholar. Under exceptional circumstances the Scholarship may be continued for a third year, when it appears that the renewal is likely to result in work of scientific importance.

2. Candidates must be British subjects, and have spent three years consecutively at the College.

3. The competition will ordinarily be limited to candidates who are not more than 30 years of age, and who have been for the last full year, and are now students of the College, or have been students of the College for a full year ending within twelve months prior to the date of nomination, and since ceasing to be such students have been engaged solely in scientific study.

4. Candidates will be required to signify their readiness to offer themselves for examination, if thought necessary, and must give evidence of their capacity for advancing science, or its applications, by original research in some branch of science, the extension of which is especially important to our national industries.

5. Every Scholar will be required to undertake that during his tenure of the Scholarship he will devote himself wholly to scientific study, and not hold any position to which an emolument is attached.

6. Every Scholar will, in the absence of special circumstances, be required to proceed to an institution other than that by which he is nominated. The Scholarship is tenable in any University at home or abroad, or at any other properly equipped institution approved by the Commissioners.

1891	A. Holt	1896	Henry E. Annett
1892	John T. Conroy	1897	William A. Caspari
1893	Arthur W. Titherley	1898	Ernest Brown
1894	Arthur J. Ewart	1899	Charles G. Barkla
1895	John T. Farmer	1900	John C. W. Humfrey

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4. LYON JONES SCHOLARSHIPS

(For Medical Students)

Founded in the year 1878.

The following are the regulations :—

Junior Scholarship

1. The Scholarship is open to students at the end of their first M.B. course, provided that they have taken out the full course for the first M.B., and are not more than one year's standing from the date of registration as Medical Students.

2. The holder of the Scholarship will be required to proceed to a Victoria University degree in Medicine.

3. The Scholarship will be awarded upon the result of the College terminal examinations in the subjects of the First M.B. course, viz., Chemistry, Physics, Zoology and Botany.

4. The Scholarship will be paid in two annual instalments of £21 at the commencement of the second and third years of study respectively, and the holder will be required to pay the composition fee for the Victoria degree.

1878	A. Barron
	A. H. Wilson
1879	F. C. Larkin
1882	G. W. Chaster
	A. A. Kanthack
1883	H. A. Burrowes
1884	T. J. Sweeney
1885	A. J. Chalmers
1886	E. Spencer
1887	F. J. Woods
1888	B. Stahlknecht
1889	H. E. Annett
1890	F. W. Morris
1891	E. E. Laslett
1893	R. J. Ewart
	H. F. Hart
1894	J. W. Miller
1896	R. E. Kelly
1897	D. M. Alexander
1898	A. G. Christian
1899	H. R. Hurter
1900	T. E. Walker
	P. Hick

Senior Scholarship

1. The Scholarship is open to all Medical Students who submit evidence of satisfactory attendance at University College on courses in Anatomy and Physiology extending over two Winter Sessions, and on one Summer course in Therapeutics.

2. The Scholarship is awarded at the end of the second or third year of Medical study, the Science courses in the case of University students being reckoned as the first year.

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3. The successful candidate must remain a student of University College during his fourth and fifth years, and attend the classes in a satisfactory way.

4. The Scholarship is awarded on the results of the senior class examinations in Anatomy and Physiology (Winter Session), and in Therapeutics (following Summer Session).

5. The Scholarship will be paid in two annual instalments of £21.

1878	R. Honeyburne
1879	A. Barron
	J. W. Ellis
1880	A. H. Wilson
1881	F. C. Larkin
	J. Walker
1882	F. H. Barendt
1883	B. Sumner
1884	A. A. Kanthack
1885	W. E. Livsey
1886	H. A. Burrowes
1887	R. H. Carlisle
1888	V. B. Bennett
1889	J. Evans
1890	F. J. Woods
1892	H. T. Nixon
	H. E. Annett
1893	J. H. Davies
1894	E. E. Laslett
1895	W. Graham
1896	H. M. Fletcher
1897	W. J. Young
1898	R. E. Kelly
1899	O. T. Williams
1900	G. W. N. Joseph

5. DERBY EXHIBITION

(For Medical Students)

Founded in the year 1882 by the Right Hon. the Earl of Derby.

The Exhibition is of the value of £15 for one year, and is awarded by competitive examination annually.

1. The examination is entirely clinical in its character, and is conducted partly at the bed side, and partly by written commentaries on medical or surgical cases

2. Students of the Medical Faculty, having no legal qualification, are eligible for this Scholarship up to the end of two years after passing their Professional examination in Anatomy and Physiology.*

3. The examination will be held during the first fortnight of March, and in 1901 will be Clinical.

* Courses of study for higher qualifications interpolated in the curriculum are not counted in determining the eligibility of Candidates.

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4. Candidates must give notice to the Dean on or before the last day of February.

1882	A. H. Wilson	1892	F. J. Woods
1883	H. A. Bredin	1893	J. Unsworth
1884	G. S. Wild	1894	H. R. Wilson
1885	W. G. Moore	1895	H. C. Wall
1886	W. T. Thomas	1896	E. E. Laslett
1887	J. H. Abram	1897	A. S. Griffith
1888	R. J. M. Buchanan	1898	E. E. Glynn
1889	J. Gould	1899	H. M. Fletcher
1890	J. C. M. Given	1900	J. L. Dimond
1891	W. N. Clemmey		

6. PRIZE SCHOLARSHIP

A Prize Scholarship was established and awarded in recognition of the merits of a special student.

1900 John M. McGregor

PRIZES

1. BARING PRIZE

In the year 1885, Mr. Thomas Baring placed in the hands of the Treasurer of the College the sum of £100 for the purpose of founding 'a Prize to be awarded annually for proficiency in Greek, Latin, or German.'

1. The value of the Prize is £5, to be expended in books.

2. The examination consists mainly of an essay or passage of English chosen for translation into the selected language. The subject is announced in the Summer Term, and the exercises are sent in at some fixed date before the end of the Summer Vacation.

3. The competition is open to all who have registered as Day Students during any part of the Session in which the subject for examination is announced.

4. The exercises are to be sent in with a motto, and not in the author's handwriting, and are to be accompanied by a closed envelope bearing the same motto outside, and the author's name within.

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Greek		*Latin*	
1886	Marion Sherratt	1887	Richard K. Leather
1889	Fanny C. Beaumont	1890	Lionel D. Barnett
1892	Lionel D. Barnett	1893	Joseph Sumner
1895	Archibald T. Strong	1896	Edward Wooll
	Edward Wooll	1898	John M. MacGregor
1898	Lucy E. Shallcross		

German			
1888	Emily Christian	1897	Not awarded
1891	Rachel W. Henderson	1899	Dora E. Yates
1894	John A. M. Trietschel		

2. EDWARD RATHBONE PRIZES

In the year 1886 the Reverend J. H. Thom founded two prizes for the encouragement of *English Literature*, *Philosophy*, and *Political Economy*, commemorative of his nephew, Edward Rathbone, and with his name attached in perpetuity.

The Prizes are of the value of £5 and £2 10s., to be expended in books.

They are at present connected with the College Evening Classes, and are offered to students attending regularly the Lectures in English Literature, Philosophy, or Political Economy.

1887	W. Vernon Young	1893	Lucy Yates
	Hugh L. Roxburgh		L. Cross
1888	Margaret Sprunt		G. Baxendale
1889	K. Shirmacker	1894	Margaret Dickin
	W. A. Baird		D. Ferguson
	C. S. Mactaggart	1895	Caroline C. Graveson
	G. Baxendale		William R. Hale
1890	T. G. Armour	1896	Not awarded
	W. C. Armstrong	1897	Not awarded
1892	T. Smythe Hughes	1898	George Thompson
	W. Roberts	1899	Not awarded

3. ENGLISH ORATION CUPS

Presented in the year 1891 by the late S. H. Thompson, of Thingwall, as prizes for the best *English Declamations*.

The regulations are as follows :—

1. The competition shall be open to all who, at the time of the announcement of the subject, are registered Day

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Students of the College: but no winner of an Oration Cup shall be permitted to re-enter for competition in any future session.

2. The adjudicators shall be the Principal, Professor of Modern Literature, and either one or two assessors appointed from year to year by the Senate.

3. Each Oration shall be upon a subject chosen from a list of subjects proposed by the adjudicators. The length of the Oration shall be such as to occupy not less than fifteen or more than thirty minutes in public delivery.

4. A list of subjects, representative of Literature, History, and Science, and selected with a view to treatment in Oration form, shall be published not less than two weeks before the end of the Summer Term.

5. The adjudicators shall select from the Orations sent in those which are, in their opinion, deserving of recitation. Such selected Orations shall be publicly declaimed before the adjudicators, and the whole, or at least some portion, of each Oration shall be recited without the aid of written notes. Excellence of declamation, as well as excellence of subject matter and composition, shall be taken into account in determining the awards.

6. The order of merit shall be determined by the adjudicators, but it shall be within the discretion of the Senate, acting upon the report of the adjudicators, to withhold either the first, or the second, or both of the Oration Cups, where the standard of merit attained is not sufficient.

7. Orations shall be sent in to the Secretary, in writing, on or before December 14.

1892	John K. Montgomery William J. Waterhouse	1896	Not awarded
1893	Not awarded	1897	Not awarded
1894	Not awarded	1898	Not awarded
1895	Not awarded	1899	Walter G. Lord

4. OWEN-TEMPLEMAN PRIZE

In the year 1898, the residue of the estate of Ann Templeman was placed at the disposal of University College, Liverpool, for the purpose of founding a Celtic Prize.

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The following are the regulations :—

1. The Prize shall be known as the Owen-Templeman Prize, having been founded by Ann Templeman in memory of John Owen.

2. The object of the Prize shall be the promotion of Celtic studies, linguistic, literary, or historical.

3. The amount of the Fund (less all expenses, duties, etc.), viz., £432 1s. shall be invested by the College in any investment for the time being authorized for the funds of the College, and the interest shall be allowed to accumulate until the principal reaches £450, when the Fund shall be considered as completed.

4. For the first five years after the completion of the Fund, the income from the fund shall be appropriated to the purchase of books for the formation of a Celtic Library, such books to be selected by the Senate of the College, and to be suitably stamped 'Owen-Templeman Bequest.'

5. After a period of five years after the completion of the Fund, the income of the Fund shall be applied as a Prize for the benefit of promising students of limited means, by preference being graduates who have studied at University College, Liverpool, and who shall prosecute Celtic studies in that College, subject to the approval of the Senate.

6. The Prize shall be awarded by the Senate, who shall from time to time determine the conditions and tenure of the Prize.

7. If in any year, owing to there being no candidates, or the candidates not attaining a sufficient standard of merit, the Prize be not awarded, the amount of the Prize for that year may be applied by the Senate to the purchase of books of Celtic scholarship, to be stamped 'Owen-Templeman Bequest,' or to the augmentation of the capital of the Fund, or otherwise for the promotion of Celtic studies.

5. FELICIA HEMANS PRIZE

In the year 1899, a fund collected by public subscription was placed in the hands of the Treasurer of the College, upon trust, for the purpose of founding a Prize in memory of the poetess, Felicia Dorothea Hemans.

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The Trust Deed provides that—

1. The Fund shall be called the 'Felicia Hemans Memorial Fund.'

2. The annual income of the Fund shall be applied or awarded as a Prize, to be called the 'Felicia Hemans Prize for Lyrical Poetry.'

3. The Prize shall consist (1) of a Bronze Medal bearing upon one side the profile of the said Felicia Dorothea Hemans, with the inscription 'Felicia Dorothea Hemans, 1793-1835,' and upon the other side thereof a suitable design with the words 'Prize Lyrical Poem, University College, Liverpool,' together with the year in which the said medal was awarded; (2) of a year's interest or income upon or of the amount for the time being of the invested fund, after deduction therefrom of the cost of the medal for that year, such interest or income to be laid out in the purchase of books or otherwise, or to be paid over to the prize-winner in money, in the absolute discretion of the judges.

4. The Prize shall be open to all competitors, both male and female, but shall not be awarded more than once to the same competitor.

5. The Prize shall not be awarded in any one year, unless a Lyrical Poem shall have been submitted of sufficient merit to deserve it, and in that event the income of the fund for that year shall be accumulated and invested.

6. The Judges shall be the Principal, and the Professors of Modern Literature and Architecture or Arts, of University College.

1900 Sybil F. Partridge

6. GLADSTONE MEMORIAL PRIZE

This Prize, to be expended in books stamped with the College Arms and the title 'Gladstone Prize,' will be awarded annually for an essay on some subject connected with History, Political Science, or Economics.

The Prize will be open to all who have been registered day students of the College for not less than a complete session, and who on June 1 in any year (*a*) are still day students of the College, (*b*) have been day students within

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a period of twelve months previous to that date. The Prize will be offered in 1901. Full regulations will be announced later.

7. WILLIAM RATHBONE MEDAL AND PRIZES

Instituted in the year 1900, to commemorate the part taken by William Rathbone, Esq., LL.D., in the establishment of the Engineering Department.

The Medal is awarded annually to the student who after a three years' course has most distinguished himself in Engineering work.

The Prizes are awarded annually for the best sets of worked drawings in Courses A, B, and C.

Medal

1900 R. R. Cormack

Prizes

1900	W. E. Curnock (*3rd year*)	1900	P. V. Tippet (*1st year*)
	F. W. S. Bushell (*2nd year*)		A. T. Beazley "
	F. Rogers "		F. O. Clarke "
	P. H. Powell "		

8. ROBERT GEE PRIZE

(For Medical Students)

A Book Prize, value £5 5s., is awarded annually on the results of the Class examination in Diseases of Children.

1899 P. A. Browne | 1900 P. Benington

9. FLETCHER PRIZE

(For Medical Students)

A Book Prize, value £3 3s., was established in 1899 by Dr. Gornall, of Warrington, in memory of the late Mr. Fletcher, a former Lecturer in Physiology in the Royal Infirmary School of Medicine. The Prize is awarded annually to the student who takes the first place in the Junior Class of Physiology.

1900 H. R. Hurter

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TATE LIBRARY

The nucleus of the present collection of books originated in a gift of about 1,000 volumes presented by the Rev. Canon Hume in 1882. Enriched by generous private donations the library soon outgrew the space allotted to it, and ampler provision for expansion was made in the Tate Library of the new Victoria Building. This noble room, 100 feet long by 30 feet wide, was built and furnished by Sir Henry Tate, whose name is permanently associated with it. It is decorated by busts of Sir Henry Tate and Principal Rendall, and by the Shadford Walker collection of engravings, purchased and presented to the library by Sir Henry Tate in 1889.

The foundations of a good general library were laid by purchases from a terminable fund of £1,000 given by Mr. George Holt in 1887, and from a gift of £5,500 for immediate expenditure by Sir Henry Tate in 1894. The libraries of Canon Hume, Prof. Clark, the Rev. J. H. Thom (including the books of Blanco White), Dr. Nottingham, and Thos. Glazebrook Rylands, Esq., were acquired by bequest, and friendly links with local learned societies were established by the transference to the College, on perpetual loan, of the libraries of the Liverpool Royal Institution in 1894, and the Liverpool Literary and Philosophical Society in 1899. Among other benefactors gratefully remembered are the Universities of Oxford and Cambridge, the Lords Commissioners of Her Majesty's Treasury, Mrs. Aikin, Thomas Baring, Esq., Dr. John Newton, Herbert Campbell, Esq., E. Stuart Brown, Esq., A. F. Warr, Esq., M.P., the Rev. S. A. Thompson Yates, R. Gladstone, Esq., H. Yates Thompson, Esq., William Rathbone, Esq., Charles Langton, Esq., and W. P. Hartley, Esq.

The College aims at founding a Scholars' Library which shall provide staff, students, and external researchers with the leading authorities and works of reference in the

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main departments of learning. Its books, now numbering 37,000 volumes, include a valuable collection of Academies and Periodicals, and great series such as Migne, Pertz, Muratori, Acta Sanctorum, etc. Among rarer possessions are the Rylands collection of early works on geography and astronomy, several illuminated manuscripts, a collection of works by or relating to Wm. Blake, sets of the Roxburghe, Bannatyne and Maitland Clubs, and over a hundred incunabula, the earliest specimen of printing, being the final sheets of the Constitutiones of Clement V, printed by Fust and Schoeffer at Mainz, in 1460. Special bibliographies have been issued, and the main catalogue is being completed by the aid of a grant for the purpose from the Council.

The sources from which the library is maintained are :—(1) An annual grant from the Council of £155 ; (2) the interest of a capital sum of £1,000 given in 1893 by the Rev. S. A. Thompson Yates for the purchase of works in economics and history or in classics ; (3) the interest (£135) of a capital sum of £5,000 given in 1896 by Sir Henry Tate for general library purposes.

MUSEUMS

MUSEUM OF ENGINEERING

The Engineering Museum opens on the main staircase of the Walker Engineering Laboratories, so that it is accessible at all times to day or evening students, or to anyone entering the building. It is well lighted, occupying the whole front of one floor of the Laboratories.

The Engineering objects which it contains consist of large working models standing separately, models of ships round the walls, and small models and pieces of apparatus contained in cases round the wall, or up and down the centre of the Museum.

Many of the larger and more valuable of the models have been lent by the kindness of engineers in the neighbourhood, and are liable to be removed at any time.

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These models consist of cotton presses, cane crushing machines, steam steering gear, and others of a similar character.

In the cases are contained either models or specimens presented to the College, or apparatus bought by means of the Departmental grant. Among the former are a very interesting historical collection of modern boilers, models of a floating pontoon and dock, sections of a gas governor, electrical fittings and connections, various kinds of patent blocks and pulleys, water meters and model engines. In addition to these, and probably of equal value to the students, are specimens of iron and steel, examples of corrosion and failure, wear of railway rails, specimens of leather belts, etc. There are also various specimens of raw and finished material, in connection with which there are important applications of machinery, such as in milling, the cotton industry, and in metallurgical work. It is not by any means the intrinsic value of such specimens that render them valuable to the Engineering Department, and engineers and others will be conferring a great kindness on University College by sending any such specimens of failure or corrosion, or specimens of materials of interest to engineers, for which they themselves have no further use.

THE MUSEUM OF CHEMISTRY

The Chemical Museum is a representative collection, commenced in 1875, of specimens arranged mainly for educational purposes, the various chemical substances being placed in systematic order so that students are able to study them as concrete illustrations of their text-books.

The Museum also gives valuable aid in the identification of compounds obtained in the course of research work by comparison with pure specimens.

One case contains a specimen of every known elementary substance; then follow cases containing the principal salts of the metals in classified order, together with natural crystals of minerals in each group.

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Another series of cases contains typical specimens of every class of so-called organic substances, or carbon compounds. On the same horizontal line are bodies of similar chemical constitution; first the hydro-carbons, commencing with the simplest on the left, and increasing in density regularly towards the right. In perpendicular lines are placed the derivatives of each of the hydro-carbons in ascending order of complexity. Other special cases are devoted to coal-tar dyes, coal-tar drugs, and other artificial products.

Other series of specimens, illustrating the various stages in the manufacture of sugar, soap, iron and steel, ultramarine, mineral colours, carborundum, etc., have from time to time been presented by manufacturers; these, together with models of metallurgical furnaces, etc., serve as an important aid to the study of applied chemistry.

The Museum also contains a Lovibond's Tintometer, with a standard collection of coloured glasses for reference. The collections are increased continually alike by gifts and by preparations made by students.

ZOOLOGICAL LABORATORIES AND MUSEUM

The Zoological Laboratories comprise ordinary Junior, Senior, and Research Laboratories, and in addition a 'Fisheries' Laboratory, and a room for work on local Marine Biology, where the L. M. B. C. collections of the Museum can be consulted.

The Museum of Zoology is at present a temporary building given by the late Mr. George Holt. It is not yet completely fitted with cases, and one of its rooms is at present temporarily occupied as the class-room of Geology.

This Museum of the Natural History Department is intended to serve several distinct useful purposes.

1. It is open freely to all, and is designed to be of general educational value. It exhibits a series of the typical and more noteworthy forms of living nature,

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including the fossil remains of extinct animals, a 'Local' collection, a 'Fisheries' collection, and an Anthropological case.

2. It is for the more special use of the students in the Zoological classes. The specimens are used to illustrate the lectures and demonstrations, and are arranged in the cases and labelled so as to be available for students reading in the Museum.

3. Some of the collections have been made use of for special advanced study and research, and contain specimens which cannot be seen elsewhere. This is especially the case with the 'Fisheries' collection, the 'Local' collection, the collection of Tunicata, and some of the series of Fossil forms.

The MUSEUM at present contains :—

I. *In the Main room*, on ground floor, the College Zoological collection, a collection of Local Fossil Reptilian Footprints, a Type collection of Anthropology (Prehistoric Archæology).

II. *In the South room*, on ground floor, the Sea-Fisheries collection (illustrating the local sea-fisheries, and the application of science to 'Aquiculture').

III. *In the South room*, on first floor, the College Geological collection.

IV. *In the Gallery*, the 'Local' (L. M. B. C.) collection, collection of Deposits from the floor of the ocean. A few other smaller special collections.

As there is no fund for the purchase of specimens, the Museum is dependent for its increase upon donations from friends, and many interesting specimens and preparations have been given by former students and others interested in the Natural History Department. All communications in regard to the Museum should be addressed to the Professor of Natural History.

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HARTLEY BOTANICAL LABORATORIES AND MUSEUM

The Botanical Department will, during the Session 1900-1, be transferred to the new Botanical Laboratories in Brownlow Street, the gift to the College of W. P. Hartley, Esq., of Aintree. The buildings will be formally opened in October, 1901, by Sir W. T. Thisleton Dyer, K.C.M.G., F.R.S., Director of the Royal Gardens, Kew.

The Laboratories occupy a site with a frontage of 85 feet facing Danzie Street, and 37 feet facing the Chemical Department, and form a building divided into three principal stories with two mezzanines and a basement. The main entrance in Brownlow Street leads through a Vestibule into a Hall, in which is placed the principal staircase open to a lantern-light at the top of the building. The Basement is occupied by Storerooms, Lavatories, and Heating-chamber. On the ground floor is placed the Museum, 45 feet long by 34 feet broad and 21 feet high, with a gallery 10 feet 6 inches above the floor. The Museum will contain not only morphological specimens, illustrative of the scientific aspect of Botany, but also specimens of all products of vegetable origin used in the arts, both in the raw and manufactured state. Associated with the Museum are a Workshop and a Museum preparation room.

The first mezzanine floor is occupied by a small class-room and the Herbarium, fitted with cases for dried plants.

On the first floor is placed the Lecture Theatre, capable of accommodating 120 students. Opening off the Theatre is the Professor's private room, with an adjacent private Laboratory. On this floor also is situated the Departmental Library.

The second mezzanine floor carries the Anatomical Research Laboratory, and also the experimental Physiology Laboratory and Dark Room, fitted with all the most

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important appliances for research, either Anatomical or Physiological.

On the top floor is placed the Junior Laboratory, capable of accommodating 65 students at one time, a Senior Laboratory accommodating 12 students and a Demonstrator's private room and Laboratory. On the roof will be placed a small Greenhouse with access from the Junior Laboratory. The buildings will be lit throughout with electric light, and all the Laboratories will be fully equipped with the needful shelving, cases, microscopes, and physiological apparatus. The furniture will be of pitchpine and polished canary wood, and the Museum and Herbarium completely fitted with cases, museum glass, and other necessary equipment.

The Professor takes this opportunity of enlisting the aid of merchants and importers in Liverpool in enabling him to furnish the Museum with samples of all commercial products derived from the vegetable world, both in the raw and manufactured state. All such gifts will be thankfully acknowledged. It is hoped that thereby the Botanical Museum may become in time a centre of information on Economic Botany for the public of Liverpool and the district generally. The Museum will, at advertised hours, be open to the public.

MUSEUMS IN THE FACULTY OF MEDICINE

These comprise *Museums of Anatomy*, *Pathology*, *Materia Medica*, *Hygiene*, *Gynæcology*, and *Forensic Medicine*. Descriptions of these collections will be found in the Medical Prospectus, pp. 13-15.

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PROSPECTUS OF DAY CLASSES

IN

ARTS, SCIENCE, AND LAW

FOR THE SESSION 1900-1901

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THE VICTORIA UNIVERSITY

THE Victoria University was founded by a Royal Charter, bearing date the 20th April, 1880, and the powers of the University were further enlarged by a Supplemental Charter bearing date 20th March, 1883.

The QUEEN is the Visitor of the University.

The authorities of the University are the Chancellor of the University, The Right Honourable EARL SPENCER, K.G., D.C.L., LL.D.; the Vice-Chancellor of the University, NATHAN BODINGTON, M.A., Litt.D.; the Pro-Vice-Chancellor, Professor A. S. WILKINS, Litt.D., LL.D.; the University Court; the University Council; and the Convocation of the University.

The University has power to confer Degrees on persons who have pursued a regular course of study in a College of the University, and who submit themselves for examination.

The Colleges of the University are :—

The Owens College, Manchester, constituted by the Charter a College of the University.

University College, Liverpool, admitted as a College of the University, by resolution of the University Court, 5th November, 1884.

The Yorkshire College, Leeds, admitted as a College of the University, by resolution of the University Court, 3rd November, 1887.

The CALENDAR of the University, containing full information as to Examinations for Degrees, Scholarships, and Prizes, with copies of Examination Papers, &c., is published by J. E. CORNISH, 16 St. Ann's Square, Manchester. All enquiries relating *to the University* should be addressed to *the Registrar, Victoria University, Manchester.*

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UNIVERSITY COLLEGE

ACADEMIC TERMS

The Academical year consists of three Terms, Autumn, Lent, and Summer. The AUTUMN TERM commences Thursday, October 4, and ends Friday, December 21; the LENT TERM commences Monday, January 7, and ends Saturday, March 23; the SUMMER TERM commences Monday, April 22, and ends Saturday, June 29. During vacations, and also on Whit Monday, the College will be closed.

ADMISSION OF STUDENTS

The College provides Day and Evening Classes, open to men and women alike. Classes held in the Medical School are open to men only.

Day students seeking admission must apply to the Principal, who will attend at College on Monday, Tuesday, and Wednesday, October 1, 2, 3; from 10.0 to 1.0 and 2.0 to 4.0, for the purpose of registering students for the Autumn Term; also from 9.30 to 1.0 on Saturday, January 5, and Saturday, April 20, for the purpose of registering students for the Lent and Summer Terms.

Every candidate for admission will be required to produce a certificate of good character from his or her last instructor, or such other testimonial as shall satisfy the Principal, and also to sign a declaration of obedience to the College statutes and regulations for the time being.

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Entrance Examination

Students over sixteen years of age are admitted to the College without examination. No person under fifteen years of age will be admitted as a day student, and all under sixteen, who cannot produce an examination qualification, will be required to pass an entrance examination previous to admission. No entrance examination will be held at the commencement of the Summer Term, nor can anyone under sixteen years of age be then admitted as a student.

The examination will be held at the College on October 1 and 2, and on January 4 and 5. The hours of examination will be on the first day, from 10.0 to 12.30 and from 2.0 to 4.0; on the second day, from 10.0 to 1.0 only. Candidates are required to send in their names to the Principal *at least one week before the examination*, and at the same time to notify the branch or branches of science, and the selected language in which they desire to be examined. The examination consists of three parts, in two of which, at least, it will be necessary to qualify:—

1. Languages. *a*. Latin. *b*. Greek (for which French or German may be taken as an alternative).
2. Mathematics. Arithmetic. Euclid, i-iii. Algebra (up to simple equations).
3. Science. Any branch or branches at the option of the candidate.

REGULATIONS

General

1. Every student is required, at the time of admission, to sign a declaration of obedience to the statutes and regulations of the College for the time being.

2. All students must enrol themselves on the College Register within one week of the commencement of Term. No student will be permitted to commence attendance at any course of lectures after this date, unless able to furnish to the Senate satisfactory reason for having failed to do so earlier.

3. The library, reading room, common room, cloak room, and luncheon rooms are open to students under such regulations as shall be from time to time issued by the Senate.

4. Students will be required to make good, to the satisfaction of the Senate, any loss, wilful damage, or injury they may occasion to any property of the College.

5. Smoking within the precincts of the College is strictly forbidden.

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6. The Principal may exclude any student from any part of the College or its precincts.

7. No allowance will be made, nor will the fee paid be returned, for any portion of the curriculum that a student may forfeit by irregularity of attendance or misconduct, and any wilful violation of these or other rules which may from time to time be issued by the Senate may subject the offender to removal from the College, and to the forfeiture of all fees and privileges as a student of the College.

Lectures

8. A card of admission to the several classes is issued at the Registrar's office in the College, on the presentation of a certificate signed by the Principal, and on payment of the fees. This card must be submitted to the Professor or Lecturer conducting the class, to be countersigned by him, and will entitle the student to attend the class.

9. Students are required to be punctual and orderly in their attendance at lectures, and in all laboratory work to conform to such regulations as the Professor of the department shall impose.

10. Any student unavoidably absent from lecture is expected to communicate the cause of absence to the Professor or Lecturer conducting the class. Every student must present himself at the terminal class examination, unless expressly excused by the Principal.

11. Any Professor may require a disorderly student to withdraw from the lecture room for the day, and the Principal may suspend any student from attendance on any class or classes. Habitual neglect of work in any class, without good reason assigned, will be regarded as a breach of discipline, and may subject a student to suspension from the class.

FEES

The fee for each course is appended in the Syllabus to the announcement of the course, and will also be found in the General Time Table, pp. 89-94.

Day students are required to pay an annual registration fee of £1 1s., but if not more than two classes

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are attended, the fee is 5s. per term. This fee includes all charges for registration, and for the use of the library, common rooms, and refectory provided by the College. The subscription to the reading rooms is 2s. 6d. for the session. Lockers are provided in the common rooms for the use of students, and furnished with separate keys, for the use of which an annual rent of 2s. 6d. is imposed. For the cost of the key an additional 2s. 6d. is charged, but will be repaid to the student on the key being returned. Students, on relinquishing their lockers, and at the end of the academical year, are in all cases required to hand back their keys to the Registrar.

TATE LIBRARY

Librarian : JOHN SAMPSON

RULES AND REGULATIONS

HOURS.—During the Academic Term the library is open between the hours of 10.0 and 5.0 on every weekday, except Saturday, when it closes at 1.0. On the evenings of every weekday, except Saturday, the library is open from 7.0 to 9.30.

1. Books may be taken out only by registered day students, associates, and members of the teaching staff.

2. A separate voucher must be filled in (legibly and in ink) and deposited with the Librarian for each work borrowed. No book must *under any circumstances* be taken out of the library until a voucher has been given for it.

3. All books borrowed must be returned to the book tray within a fortnight of the day of issue, and no returned books may be taken out again until they have been replaced on the shelves by the Librarian.

4. No student may have in his possession more than three volumes at a time.

5. Holders of books will be held responsible for injury or loss of the same.

6. Any student wishing to use a book already taken out

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by some other member of the College should give written notice of his wish to the Librarian.

7. Silence shall be observed in the library. Any reader disturbed by a breach of this rule should bring it to the notice of the Librarian.

8. VACATION. Every book borrowed must be returned six days before the end of Term, regardless of the date of issue. Books will be re-issued, by permission, for the vacation three days before the end of Term, returnable on the first day of the new Term.

9. RESERVED BOOKS. No dictionary, work of reference, or book placed on the reserved shelves may be taken out of the library, and students referring to these books in the library must replace them, after use, on the cases allotted to them.

Rare or valuable books in the glazed shelves are issued only at the discretion of the Librarian.

10. ENROLLED READERS. Former students (not associates), members of learned societies meeting at University College and at the Royal Institution, members of the learned professions, and other fit persons, on approval of their names by the Library Committee, have the privilege, renewable each session, of using the library for purposes of reading and reference only, on payment of two guineas annually.

In special cases this privilege may be extended *gratis* to teachers engaged in the higher branches of study who shall make application, and shall satisfy the Library Committee that they are able to use the library to advantage.

11. THEORY OF EDUCATION. The educational books purchased from the City Council Grant may be taken out by any student attending any of the lectures on the Theory or Art of Education, whether a registered day student or not. Only two of these books may be had out at one time.

12. EVENING STUDENTS. Students attending evening lectures at the College may use the library in the evenings for the purposes of reading and reference only. Evening students are not permitted to remove books from the shelves, but should apply to the attendant.

13. SPECIAL READERS' ROOM. Persons wishing to use the special readers' room for research work should make application to the Librarian.

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14. FINES. Anyone infringing rule 2 will incur a fine of 10s. Anyone infringing rules 4, 7, or 9 will incur a fine of 2s. 6d. Anyone detaining a book beyond the time allowed will incur a fine of 3d. per day on each volume, and no defaulter will have the privilege of taking books out.

COLLEGE COURSES

All College lectures (except medical) are open to all registered students of the College, men or women. Before attending any course of lectures, students are required to register the attendance with the Principal, and to pay the prescribed fee to the Registrar, who will supply the admission card entitling to attendance upon the course.

At the close of the AUTUMN and LENT TERMS there are formal examinations of students in the various departments of College work. These examinations will be held, in the present session, on December 17, 18, 19, 20, and 21, and on March 18, 19, 20, 21, and 22. They will mainly be directed to testing the results of work done in the College classes, but will not be entirely confined to definite portions of prepared work.

College courses are primarily arranged to meet the requirements of candidates for degrees and diplomas of the Victoria University. An outline of the main regulations of the University and lists of classes suitable for the various degree courses will be found on pp. 26-28, 95-97.

In addition to the University courses there are at the College a School of Architecture and Applied Art, see pp. 226-235, and a School of Commerce, see pp. 236-238. The complete course in each of these schools extends over two years. The School of Commerce is intended for students who have left school between sixteen and seventeen years of age, and can furnish evidence of fitness to profit by the courses of study arranged.

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The College likewise trains candidates preparing for the examinations of the University of London, a short account of which will be found on pp. 82-84.

The College is recognised by the Senate of the University of London as a centre for the holding of the June Matriculation examination, the Intermediate examinations in Arts and Science, the Preliminary Scientific examination, and the B.A. (Pass) examination. The College does not make arrangements for the conduct of the January Matriculation examination, and the *practical* parts of the examination in Zoology and Biology can be held nowhere except in London. The above examinations are open to all properly qualified persons, whether students of the College or not, who may desire to enter for them. The local entrance fee will be the same in all cases, viz., £1 for the Matriculation examination, and £3 for any other examination.

College lectures are also suitable for candidates preparing for Home and Indian Civil Services, Cambridge Higher Local, and Higher University examinations.

The College is recognized by the Universities of Scotland as one of the institutions at which candidates for Degrees in Medicine may spend three out of the required years of study, and many of the courses required for the B.Sc. may be taken at the College.

COLLEGE CERTIFICATES

University College awards special certificates in Civil, Mechanical, and Electrical Engineering, Chemistry, and Architecture. For certificates in Engineering, see p. 154; in Chemistry, p. 189; in Architecture, p. 228.

ASSOCIATES

1. In order to preserve the connexion of past students with the college, a special roll has been instituted for the enrolment of ex-students as associates.

2. Those students are eligible as associates who, having attended College lecture courses for not less than three sessions and having attained a University degree, or some other public diploma, have been approved by the Senate for enrolment among the associates. The Senate further have power of their own motion to confer like recognition upon students who have attained some form of special distinction, though attendance upon College lectures has extended over less than three sessions.

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3. Associates have the privilege of using the College library or refectory (and any other privileges that the Senate may from time to time confer) upon payment of a fee.

4. The Senate have power at their discretion to remove from the list of associates any name which it is, in their opinion, undesirable to retain upon the roll.

REFECTORY

Dinners, lunches, and other refreshments are provided in the College refectory daily between 12.0 and 2.0. Tea may be obtained up to 6.0, except on Saturdays, when the refectory is closed at 2.0.

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COLLEGE SOCIETIES

OLD STUDENTS' ASSOCIATION

(*Founded May* 2, 1900)

Past students are eligible for membership under the following regulations :—

A. Without election :
   (1) Day students of University College, or the affiliated schools, who completed one academic year.
   (2) Evening students who proceeded to graduation.

B. On election by the Committee :—
   (1) Evening students.
   (2) Day students who did not complete one academic year.

OBJECTS :—(1) To hold an annual dinner and other meetings; (2) to publish a detailed Register of all old students; (3) to establish an office for assisting old students to obtain appointments; (4) to obtain such a place in the constitution of University College as is held by graduates in other Universities; (5) in general to promote social union among the members, and to forward the interests of University College.

SUBSCRIPTION.—Life Membership, £1, or ten Annual Subscriptions of 2/6.

Hon. President—THE EARL OF DERBY.
President—J. HILL ABRAM, M.D., M.R.C.P.
Vice-Presidents—Mrs. HERDMAN, B.Sc.; R. H. CASE, B.A.
Treasurer—W. THELWALL THOMAS, F.R.C.S.
Secretary—Miss E. M. PLATT, B.A.

J. R. BATE, B.A., B.Sc.
T. H. BICKERTON, M.R.C.S.
Miss E. L. BROADBENT, M.A.
E. BROWN, M.Sc.
J. H. BURROUGHS, L.D.S.
EDWARD CAREY, LL.B.
W. EDGECOMBE, M.D., M.R.C.S.
A. M. KER, B.Sc.
P. HEYWOOD HADFIELD, M.A.
R. J. LLOYD, D.Lit.
Miss EVA MELLY.
RAMSAY MUIR, M.A.
A. W. TITHERLEY, M.Sc., Ph.D.

STUDENTS' REPRESENTATIVE COUNCIL

The Men's Council consists of fifteen members, for whose election the students are grouped in five sections—Arts, Science, and Engineering returning three representatives each, Law one, and Medicine five. And in addition to these fifteen members, College Societies which are affiliated to the Council elect either one or two representatives according to the number of their members.

The Women's Council consists of ten members, seven from the Arts side, three from different Societies.

The functions of the Council are :

(*a*) To represent the students in such matters as affect their interests.
(*b*) To afford a recognized means of communication between the students and the College authorities, as well as the general public.
(*c*) To promote academic and social unity among the students by clubs, debates, social entertainments, and by the direction of a College periodical, *The Sphinx*.

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The reading rooms (Men's and Women's) are under the jurisdiction of their respective Councils, and are open to subscribing students only. The SUBSCRIPTION is 2/6 for the session.

For matters of joint concern, the two Councils unite and act as a Joint Council.

MEN'S COUNCIL

President—P. BENINGTON.
Vice-President—Captain WALKER, R.E.
Secretary—O. T. WILLIAMS.
Assistant Secretary—N. ALDRIDGE.
Treasurer—J. A. WILSON.

WOMEN'S COUNCIL

President—Miss E. L. MORICE.
Vice-President—Miss G. M. IMLACH.
Secretary—Miss L. A. BORASTON.
Assistant Secretary—Miss C. HERSCHELL.
Treasurer—Miss D. E. YATES.

Copies of the 'Constitution and By-Laws' of the Council may be obtained free on application to the Secretaries.

U. C. ATHLETIC CLUB

The Athletic Club includes Rugby and Association Football, Cricket and Tennis Clubs. The inclusive SUBSCRIPTION is 10/-, payable at the College Office, or to the Treasurer.

The Field is situated at Field House, Wavertree, within easy access of the College by tram or train (Sefton Park Station).

A Club-house is provided at 9 Ramilies Road, where there are suitable dressing-rooms and a club-room for refreshments.

The annual sports are held during the Summer Term.

All day and evening students are eligible as members; also past students who have not ceased to be members of the Club since leaving College.

OFFICERS

Hon. President—CHARLES W. JONES, Esq., J.P.
President—Professor A. M. PATERSON.
Treasurer—Dr. CHARLES A. KOHN.
Secretary—W. E. COOKE.
Rugby Football Captain—S. SMITH.
Association Football Captain—J. WHITTON.
Cricket Captain—A. B. SYKES.

U. C. ATHLETIC CLUB (Women's Branch)

This Club was formed for the encouragement and organization of all forms of physical exercise suitable for women.

Hockey practices take place on Thursday afternoons throughout the Autumn and Lent Terms.

Membership is limited to past or present women day students.

ANNUAL SUBSCRIPTION.—3/-.

OFFICERS

President—Miss E. C. WILLIAMS.
Treasurer—Miss H. G. WHITTON.
Secretary—Miss I. C. PHILLIPS.
Captain—Miss M. E. LYSTER.
Committee Members—Miss E. P. CHISHOLM. Miss G. M. RICHARDSON.

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SOCIETY OF LITERATURE, HISTORY, AND THE FINE ARTS

The Society meets three times each Term for reading of papers and discussion on literary and historical subjects.

Membership is limited to day and evening students of the College, and such other members as the Society may elect.

ANNUAL SUBSCRIPTION.—3/-.

Presidents—Professors W. RALEIGH, J. M. MACKAY, and F. SIMPSON.
Vice-Presidents—RAMSAY MUIR, M.A., Miss E. C. WILLIAMS, L. W. BIRD.
Secretary—Miss I. F. WILLIAMS.
Treasurer—F. D. M. BARKER.

Committee—The Hon. Mrs. DOWDALL. Miss C. HERSCHELL. O. CLEMENT. J. A. WILSON.

ARTS STUDENTS' ASSOCIATION

The Arts Students' Association aims at promoting social unity amongst present Arts students, and at strengthening the connection between past Arts students and the College. The Association identifies itself with all interests of the Arts side, manages the annual Arts dinner, provides fortnightly Association debates in the Autumn and Winter Terms, together with such other social functions as may be deemed necessary; while the ANNUAL SUBSCRIPTION of 5/- admits members to the S.R.C. reading rooms, and to membership of the Society of Literature, History, and the Fine Arts.

Hon. Presidents—THE CHAIRMAN AND DEAN OF THE ARTS FACULTY.
President—J. I. CRIPPS.
Vice-President—J. A. WILSON.
Secretary—H. J. WATTS.
Assistant-Secretary—A. J. WILSON.
Treasurer—J. D. E. WILLIAMS.
Committeemen—J. C. LYON, J. G. WILLIAMS.
Senior Representatives—E. CAREY, LL.B., C. R. LEWIS, M.A.

WOMEN STUDENTS' DEBATING SOCIETY

(*Present Section*)

The Society meets three times a Term during the Autumn and Lent Terms. Membership is open to all registered women day students of the College.

ANNUAL SUBSCRIPTION.—2/-.

President—Miss E. L. FARMER.
Vice-President—Miss H. W. AINSLIE.
Secretary—Miss H. BURN.
Sub-Secretary—Miss J. D. DALGLISH.
Treasurer—Miss E. G. CROWE.
Committee Members—Miss F. L. WILLIAMS. Miss I. F. WILLIAMS.

ΘΙΑΣΟΣ

Meetings of the above Society are held at the President's house on the third Friday of each month for combined reading and study of Greek Literature.

President—Professor G. A. DAVIES.
Secretary—Miss H. B. S. MAXWELL.

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CIRCULUS LATINUS

This Society meets at least once a Term for the combined reading and study of Latin Literature. Membership is limited to present male day students and to old students of not more than three years' standing from the date of their first degree.

President—Professor H. A. STRONG.
Secretary—J. L. RATCLIFFE.

UNIVERSITY LAW STUDENTS' SOCIETY

(*Founded November*, 1896)

The objects of the Society are to encourage legal research among Law Students of the College, to promote their general interests, and to establish more intimate social relations among students by bringing them together. Meetings are held once a month at the Law Library, 10 Cook Street, during the Autumn and Lent Terms. Papers will be given by members on subjects of general interest to Law Students.

Membership is open to all who are attending, or have at any time attended, the Lectures delivered under the auspices of the Board of Legal Studies.

ANNUAL SUBSCRIPTION.—4/-.

President—Professor G. H. EMMOTT.
Vice-Presidents—Professor J. M. MACKAY, C. E. STEVENS, Esq., A F. WARR, Esq., M.P., W. A. WEIGHTMAN, Esq., JOHN LAURENCE, Esq., O. W. OWEN, Esq., and H. CHALONER DOWDALL, Esq.
Secretary and Treasurer—ROBERT S. SEGAR.
Committee—Messrs. F. C. GREGORY, O. CLEMENT, H. D. MORGAN and F. E. BODEL.

SCIENCE DEBATING SOCIETY

This Society holds fortnightly debates during the Autumn and Lent Terms. All Science students are eligible for membership.

ANNUAL SUBSCRIPTION.—2/6.

Hon. President—Professor F. S. CAREY.
Chairman—J. THOMSON.
Vice-Chairmen—E. G. WARRY, J. B. TAYLER.
Secretary—H. G. DOWIE.
Treasurer—J. P. GABBATT.
Committeemen—G. L. KNOWLES, F. POWELL, J. H. CLARKE.

U. C. MEDICAL STUDENTS' DEBATING SOCIETY

(*Founded in* 1874)

Past and present students, and members of the staff of the College and Hospitals of the city, are eligible for membership of this Society. The objects of the Society are the reading and discussion of papers, the exhibition of specimens, and the narration of cases. Meetings are held during the Winter Session on alternate Wednesdays, at 5.15 p.m., in the Thompson Yates' Reading Room.

Valuable prizes of books or instruments are given annually for the best papers read before the Society; for the best reports on Medical, Surgical, and Ophthalmological cases; for the best account of a series of Surgical cases observed in hospital; for the best specimens exhibited; for proficiency in debate. This Society is of great advantage in training students to speak in public and give a clear expression of their ideas, and it meets the warm support of the Medical Faculty. All information can be obtained from the Hon. Sec., E. Emrys Roberts.

ANNUAL SUBSCRIPTION.—2/6.

President—Dr. J. BARR.
Vice-Presidents—Mr. T. H. BICKERTON, F.R.C.S.; Mr. W. THELWALL THOMAS, F.R.C.S.
Secretaries—Dr. T. R. W. ARMOUR, E. EMRYS ROBERTS.
Treasurer—H. H. CLARKE.

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U. C. PHYSICAL SOCIETY

This Society consists of day and evening students, past and present. Others interested in the progress of Physical Science may be elected as Honorary Members.

Meetings are held fortnightly during the Autumn and Lent Terms for the reading and discussion of papers, and the exhibition of experiments and apparatus.

ANNUAL SUBSCRIPTION.—3/6; for Honorary Members.—5/-.

Hon. President—Professor O. J. LODGE.
President—G. OWEN.
Vice-Presidents—A. HAY, B.Sc., M.I.E.E.; W. H. DERRIMAN.; E. BROWN, M.Sc.; W. HEWITT, B.Sc.; C. A. KOHN, M.Sc., Ph.D.; W. E. PLUMMER, M.A., F.R.A.S.
Secretary—F. MORGAN.
Assistant Secretary—R. H. ALBERY.
Treasurer—R. B. FOSTER.
Demonstrator—E. E. ROBINSON.

U. C. ENGINEERING SOCIETY

This Society, consisting of day and evening students, past and present, meets on alternate Tuesdays during the Autumn and Lent Terms at 5.30 p.m. for reading of papers and discussion. During the Summer Term excursions are arranged to works of engineering interest. A copy of the Rules and By-Laws can be obtained from the Secretaries.

It is expected that every engineering student will become a member of the Society and attend the meetings.

ANNUAL SUBSCRIPTION.—5/-.

President—Professor H. S. HELE-SHAW.
Vice-Presidents—E. BROWN, M.Sc.; ALFRED HAY, B.Sc., M.I.E.E.; J. C. W. HUMFREY.
Treasurers—J. H. COSTAIN.; E. F. MERCHANT.
Secretary—J. W. ANDERSON, Assoc.M.Inst.C.E.

U. C. CHEMICAL SOCIETY

This Society consists of day and evening students of the College, past and present.

Meetings are held during the Autumn and Lent Terms for the reading of papers and discussion of theories.

ANNUAL SUBSCRIPTION.—5/-.

Hon. President—Professor J. CAMPBELL BROWN.
President—H. W. BROWNSDON.
Vice-Presidents—T. L. BAILEY, Ph.D.; W. B. DAVIDSON, M.A., D.Sc., Ph.D.; C. A. KOHN, B.Sc., Ph.D.; A. W. TITHERLEY, M.Sc., Ph.D.
Secretary and Treasurer—E. BRIGGS.
Demonstrator—H. H. FROYSELL.
Committee—J. A. ATHERTON.; E. GARRATT.; W. A. WHITTON.

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LIVERPOOL BIOLOGICAL SOCIETY

(*14th Session*)

OBJECT—The Advancement of Biological Science.

Meetings are held in the Zoological Department at University College on the second Friday of each month.

Ordinary Members.—ENTRANCE FEE, 10/6; ANNUAL SUBSCRIPTION, £1 1s.
University College Students.—ENTRANCE FEE, 2/6; ANNUAL SUBSCRIPTION, 5/-.

President—DR. WIGLESWORTH.
Vice-Presidents—Professor W. A. HERDMAN. Rev. Dr. KLEIN.
Secretary—J. A. CLUBB, M.Sc., Free Public Museum.
Treasurer—T. C. RYLEY, 15 Sweeting Street.
Librarian—J. JOHNSTONE, Zoological Department, University College.

U. C. CHRISTIAN UNION (Men's Branch)

(Affiliated to the B.C.C.U.)

RULE V.—'The Union shall hold a daily meeting for prayer (Saturday and Sunday excepted), during Term, and shall provide for the conduct of weekly Bible Circles, a Missionary Band, and such other meetings as the Committee shall deem advisable.'

President—J. C. LYON.
Vice-President—J. I. CRIPPS.
General Secretary—E. G. WARRY.
Missionary Secretary—R. H. EVANS.
Bible Secretary—H. G. THOMPSON.
D. P. M. Secretary—W. T. YOUNG.
Committee—O. CLEMENT and E. FITZGERALD.

U. C. CHRISTIAN UNION (Women's Branch).

This Union holds a General Meeting on alternate Wednesdays at 4 p.m., and a daily Prayer Meeting at 9.20 a.m. Bible Circles also meet fortnightly.

President—Miss G. M. IMLACH.
Vice-President—Miss M. L. BURNE.
Secretary—Miss C. HERSCHELL.
Treasurer—Miss F. WALTON.
Committee Members—Miss H. W. AINSLIE. Miss B. LACKLAND.

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UNIVERSITY COLLEGE FELLOWSHIPS, SCHOLARSHIPS, STUDENTSHIPS, AND PRIZES

(N.B.—Further particulars as to conditions and regulations will be found on pp. cxxiii-cli. An asterisk indicates that the Scholarships, &c., will be offered for competition in the present session.)

FELLOWSHIPS

**Holt Fellowships in Physiology and Pathology*.—Two of £100, tenable for one year.

**Robert Gee Fellowship in Human Anatomy*.—One of £100, tenable for one year.

**Alexander Fellowship in Pathology*.—One of £100, tenable for one year. Holder eligible for re-election.

* *Johnston Colonial Fellowship in Pathology and Bacteriology*.—One of £100, tenable for one year. Holder eligible for re-election.

SCHOLARSHIPS AND STUDENTSHIPS

I. Entrance Scholarships

These scholarships are open to all qualified candidates who are not, and have not at any time been, registered day students at the College. Every scholar will be required to register as a student of the College, and to attend not less than four day lecture courses in every term, unless the Senate expressly approve a smaller number of attendances. The scholarships are, in all cases, payable in half-yearly instalments (the first of which will be paid at the student's entrance on the College course), and are held subject to the conduct and industry of the scholar continuing to satisfy the Senate and the Council.

A scholar who upon the lapse of a College scholarship has not yet reached the end of his or her University course may be recommended without examination for a College Studentship (see p. 22).

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Bibby Scholarships.—Two of the value of £20 per annum, tenable for three years, open to candidates of either sex of not more than 18 years of age on the 1st of October following the date of examination. Holder to proceed to a Vict. Univ. B.A., LL.B., or B.Sc. degree.

* *Ranger Scholarships.*—Two of the value of £20 per annum, tenable for two years. No age limit. Holder to proceed to a Vict. Univ. B.A., LL.B., or B.Sc. degree.

Christopher Bushell Scholarship.—One of the value of £40 per annum, tenable for three years, open to youths of not more than 18 years of age on the 1st of October following the date of examination. Holder to proceed to a University degree.

Ladies' Educational Association Scholarship.—One of the value of £25 per annum, tenable for three years, open to women only, of not less than 16 and not more than 19 years of age on the 1st of October following the date of examination. Preference given to candidates educated in recognized schools in Liverpool, Birkenhead, or the suburbs. Holder to proceed to a University degree.

**Elizabeth James Scholarship.*—One of the value of £40 per annum, tenable for three years, open to candidates of either sex, without limit of age. Holder to proceed to a Vict. Univ. B.A. or LL.B. degree.

**Edward Rathbone Memorial Scholarship.*—One of the value of £25 per annum, tenable for two years, open to youths of not more than 18 years of age on the 1st of October following the date of examination. Holder to declare his intention of adopting a commercial career, and to proceed to a University degree or the curriculum of the School of Commerce.

**Edward Rathbone Commercial Scholarship.* — One of the value of £35 per annum, tenable for two years, open to youths of not more than 18 years of age on the 1st of October following the date of examination. Tenable on the same conditions as the Edward Rathbone Memorial Scholarship.

**Tate Technical Science Scholarships.*—Three of the value of £35, £35, and £30, tenable for three years, one of which is awarded annually. Open to youths only, without limit of age. Holder to proceed to a University degree in science or approved technological curriculum.

**Tate Trustees' Scholarship.*—One of the value of £35 per

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annum, tenable for three years, open to youths of not more than 18 years of age on the 1st of October following the date of examination, who have been educated in Liverpool or immediate neighbourhood. Awarded for proficiency in Classics or Mathematics. Holder to proceed to a Vict. Univ. degree.

**Thomas Hornby Scholarship.*—One of the value of £20 per annum, tenable for three years, open to candidates of either sex, without limit of age. Awarded upon the results of the Greek papers.

**Pickup Scholarships.*—Value £30 per annum, open to sons of Lancashire working men not above 21 years of age. Holder to take prescribed courses in the engineering department of University College. Awarded on Whitworth scholarship results, Science and Art examinations.

**City Council Scholarships.*—Five of the value of £30 per annum, awarded annually, tenable for two or three years. Candidates must be resident within the city area, and must not be over 19 years of age on the 1st of October following the date of examination. A *Free Studentship*, value about £30 per annum, is attached to each scholarship.

* *Sir Richard Moon Scholarship.*—One of the value of £80 per annum, tenable for two years. Candidates must be under 22 years of age on the 1st of October following the date of examination, and have been employed in the L. & N. W. Rly. Locomotive Works at Crewe, Earlestown Waggon Works, or the Wolverton Carriage Works. Holder to take approved courses in the engineering department of University College. Awarded on Whitworth scholarship results, Science and Art examinations.

* *Derby Scholarships.*—Two of the value of £35 per annum, tenable for three years. One of the scholarships is offered without limit of age, the other (vacant in 1901) to candidates of not more than 18 years of age on the 1st of October following the date of examination. Holder to proceed to a Vict. Univ. B.A. degree, or B.Sc. with honours in Mathematics.

* *Sir Edward Harland Memorial Scholarship.*—One of the value of £80 per annum, tenable for two years. Candidates must be under 22 years of age on the 1st of October following the date of examination, and have been employed in engineering shops or shipbuilding yards in the city or suburbs of Liverpool

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or Birkenhead. Holder to take approved courses in the engineering department of University College.

**Royal Institution Scholarships.*—*(Canning, Iliff, Rathbone).* Three of the value of about £30, £25, £20 per annum, tenable for three years. Open to candidates of either sex, educated for a term of not less than two years immediately preceding the date of examination at the various branches of the Liverpool Institute or Liverpool College, or at approved secondary schools within the city area. Holder to proceed to a Vict. Univ. B.A. degree, or B.Sc. with honours in Mathematics.

* *Gamble Scholarship.*—One of the value of £40 per annum, tenable for three years. Open to candidates who have for not less than two years been educated at the Cowley Schools, St. Helens, and who are not over 18 years of age on the 1st of October following the date of examination. Holder to proceed to a Vict. Univ. B.A., B.Sc., or M.B. degree.

Gossage Scholarship.—One of the value of £65 per annum, tenable for three years. Candidates must be under 17 years of age at the date of examination, and have been for two years pupils in the Farnworth Grammar School, or some other school in the borough of Widnes. Holder to proceed to a Vict. Univ. degree.

**Wallasey Urban District Council Scholarships.*—Two of the value of £35 per annum, tenable for three years. Open to candidates of either sex who have been educated for not less than two years at secondary schools in Wallasey Urban District, and who are under 19 years of age on the 1st of October following the date of examination. Holder to proceed to a University degree.

**Lundie Memorial Scholarship.*—One of the value of £15 per annum, offered biennially, tenable for three years. Open to candidates of either sex without limit of age. Awarded on the results of an examination in (*a*) the life and duties of the citizen, (*b*) English history, (*c*) elementary political economy. Holder to proceed either to (*a*) the recognized course of training in the University Day Training College, the Edge Hill Training College, or the Liverpool Training College, or to (*b*) an approved course of training at University College, Liverpool, for a B.A., LL.B., or B.Sc. degree.

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* *Robert Gee Scholarships.*—Four of the value of £25 per annum, offered annually, tenable for one year. Open to male students without limit of age. Holder to proceed to a Vict. Univ. M.B. degree. See Medical Prospectus, p. 26.

II. *Studentships

College studentships, which are awarded on the results of the entrance scholarship examination, are open to candidates of either sex who are not *less* than 18 years of age on the 1st of October following the date of examination; but no person who is, or has been, a registered student of the College for more than one term at any time during the three years preceding the examination is eligible for a College studentship. It is intended that the intellectual standard required for attaining a College studentship shall be not inferior to that required for a College scholarship.

Every applicant for a College studentship must, in the first instance, make a full statement to the Principal of the special circumstances constituting a claim to receive such studentship, and will not be allowed to enter for the examination without the permission of the Senate.

Students will have the privilege of attending all day classes held in the College, *except those of the Medical Department*, or of working in the College laboratories under the same restrictions as ordinary students, upon the payment of a commutation lecture fee of £5, together with a £1 registration fee.

A College studentship is tenable for one year, but is renewable every year for a term not exceeding three years, at the discretion of the Senate.

Every College student is required to proceed to a Victoria University degree.

Entrance Scholarship and Studentship Examination

The examination upon the results of which the scholarships and studentships will be awarded will be held at University College, from May 13-18 inclusive. The hours of examination will be from 9.30-12.30 each day, and from 2.0-5.0 each day except May 18.

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The papers will be as follows:—One in *Greek*, *Latin*, *French*, *German*, *Italian*, *English History*, *English Essay*, *Mechanics*, *Applied Mechanics with Drawing*, *Physics*, *Chemistry*, *Biology*, (*Zoology* and *Botany*), and two papers in *Mathematics*. In the language papers the examination will comprise translation, grammar, and prose composition; physics will include heat, light, and electricity; mathematics will include arithmetic, algebra, geometry, and trigonometry.

Candidates may, in addition to the written examination, be required to submit themselves to an oral examination in the subjects offered, at the discretion of the examiners.

In the case of *Chemistry*, *Physics*, or *Biology*, a practical examination may be held.

Candidates must select not fewer than *four* subjects (of which the *English Essay* must be one), nor more than *six*.

Election will not depend upon the total of marks secured in the examination, but upon the promise and ability of candidates, and greater weight will attach to real proficiency in one or more subjects than to mediocrity in several.

Candidates for entrance scholarships or studentships must send in their names, together with certificates of birth, to the Principal on or before May 1, 1901.

III. Scholarships open to the Competition of Students of the College only

**Charles Beard Research Scholarship in History*.—One of the value of £40, tenable for one year. Open to all students without limit of age.

* *Sheridan Muspratt Chemical Scholarship*.—One of the value of £50 per annum, tenable for two years. Preference given to students under 23 years of age on the 1st of January following the date of examination. The next examination will be held on December 6, 7, 8. Candidates must send in their names to the Principal not later than November 15, 1900.

*1851 *Exhibition Scholarship*.—One of the value of £150 per annum, awarded annually, tenable for two years.

**Lyon Jones Scholarships* (for medical students).—Two of the value of £21 per annum, awarded annually, tenable for two years. See Medical Prospectus, p. 27.

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**Derby Exhibition* (for medical students).—One of the value of £15 per annum, tenable for one year. See Medical Prospectus, p. 28.

PRIZES

**Baring Prize.*—A prize of £5 in books, awarded annually for proficiency in Latin, Greek, or German. Open to all who have registered as day students during any part of the session in which the subject of examination is announced. The selected language for 1900 is Greek, and the subjects are as follows :—

(*a*) Translation into Attic Greek of Addison, *Spectator*, *No.* 101, '*Future View of the Spectator*,' from 'It was under this reign' to 'that could be made to his paper.'

(*b*) An essay on the *Old Comedy of Athens*—its literary characteristics, its function, and its value to the historian.

Exercises must be sent in before October 1, 1900, with a motto, and not in the author's handwriting.

**Edward Rathbone Prizes.*—Two prizes of the value of £5 and £2 10s., to be expended in books. Open to all students attending evening classes in philosophy or political economy.

**English Oration Cups.*—Two Silver Oration Cups are offered annually for excellence in English oration. The competition is open to all who are registered day students of the College at the time of the announcement of the subjects. The subjects for 1900 are as follows :—

The fall of Carthage.	*Russia in the East.*
Lucretius.	*Faith-healing.*
Herrick.	*Nature, our tyrant and our slave.*
Omar Khayyam.	*Phagocytosis.*
Liberty, ancient and modern.	*The constitution of matter.*
International morality.	*The ethics of the Bar.*

Orations must be sent in to the Principal, in writing, on or before December 14, 1900.

Owen-Templeman Prize.—The object of this prize, which will probably be offered in 1903, is the promotion of Celtic studies. Open to graduates of University College, with preference to those of limited means, who intend to prosecute Celtic studies in that College.

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**English Essay Prize.* — The Council of the Liverpool Literary and Philosophical Society offer for competition a prize of £5 5s. for an English essay.

The prize will be open to all day students of the College who have not graduated, and to graduates who are or have been day students of the College, of not more than three years' standing from their first degree.

The winner of the prize will become an honorary member of the Literary and Philosophical Society for one year, and his essay will be read before the society.

Intending competitors are at liberty to select their own subjects for the essay. They must, however, submit the subject chosen to the Principal for his approval not later than June 30, 1900. The essays, which should not exceed 25 pages, 8vo, in length, are to be sent in to the Principal not later than September 30, 1900.

* *Felicia Hemans Prize.* — A prize, consisting of a bronze medal together with a sum of money, is awarded annually for a lyrical poem, the subject of which may be chosen by the competitor. The prize is open to all competitors, male and female (not necessarily members of University College), but will not be awarded more than once to the same competitor. Poems endorsed 'Hemans Prize' to be sent to the Principal, University College, Liverpool, on or before May 1, 1901.

**Gladstone Memorial Prize.* — This prize, to be expended in books stamped with the College Arms and the title 'Gladstone Prize,' is awarded annually for an essay on some subject connected with history, political science, or economics. The prize is open to all who have been registered day students of the College for not less than a complete session, and who on June 1, in any year (*a*) are still day students of the College, (*b*) have been day students within a period of twelve months previous to that date. The prize will be offered in 1901.

William Rathbone Medals and Prizes.—Awarded annually in the Engineering Department, see pp. 153, 154.

* *Robert Gee Prize* (for medical students). — A prize of £5 5s. awarded annually on the results of the class examination in 'Diseases of Children.'

* *Fletcher Prize* (for medical students).—A book prize of £3 3s., awarded annually to the student who takes the first place in the Junior Class of Physiology.

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UNIVERSITY COURSES OF STUDY*

STATUTES AND REGULATIONS

1. The Victoria University gives degrees in the Faculties of Arts, Science, Law, Music, and Medicine. These degrees are B.A. and B.Sc.; M.A. and M.Sc.; Litt.D. and D.Sc.; LL.B. and LL.D.; Mus.B. and Mus.D.; M.B.; Ch.B.; M.D.; Ch.M. The degrees are open without restriction of sex.

2. The degree of B.A. or B.Sc. is either an ordinary degree or a degree with Honours. In Medicine and Surgery, Honours are awarded upon the results of the Second and Final degree examinations.

3. Students of any College of the University may become University students by entering at any College upon a course of study recognized for a degree of the University. The University students are presented to the Vice-Chancellor for matriculation on some day or days, to be fixed by him, in each College (not later than the 1st of March in each academical year), and are required to sign the register of University students and to undertake to obey the regulations of the University. Matriculation does not involve any examination or fee.

4. No degree can be obtained without residence, *i.e.* attendance upon certain prescribed courses of study in a College of the University. In Arts, Science, and Law, three years of residence are required; in Music, two; in Medicine, five, of which two at least must have been passed in the medical department of a College of the University.

* For full information see *University Calendar* (price 1s.), published by J. E. Cornish, 16 St. Ann's Square, Manchester.

All enquiries relating to the University should be addressed *The Registrar, Victoria University, Manchester.*

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Ordinary Degree of B.A., B.Sc., or LL.B.

5. Candidates for an ordinary B.A., or B.Sc., or for the LL.B. degree are required to pass *three* University examinations: the *Preliminary*,* the *Intermediate*, and the *Final*. Candidates can present themselves for the Preliminary examination before entering a College or matriculating.

6. The course of study extends over three years. Matriculated candidates for any of these examinations must produce certificates from the College authorities of having attended an approved course of instruction in the subjects presented for examination. Candidates who have passed the Preliminary before entering upon their University course, may proceed to the Intermediate examination either at the end of their first or their second year of residence, but the course of study must in no case average less than ten hours a week throughout each session. This last condition does not, however, apply to the Intermediate examination in Law.

Candidates who pass the Intermediate examination at the end of their first year of study are permitted to present themselves for the Final examination at the end of the second year of study, but they are not permitted to proceed to the degree until they have undertaken a further year of study, approved by the Board of Studies, in a College of the University. Prior to presentation for a degree they must present a certificate from the College that this further course of study has been diligently pursued.

7. The examinations are held in June, at the end of the academical year. A second Preliminary examination is held in September. (The Preliminary examination is also held in July when required for the special purpose of

* Candidates for the LL.B. are excused the Preliminary if they have graduated in this or some other University of the United Kingdom.

Until 1902 London matriculation will be accepted in the Faculty of Law in lieu of the Preliminary examination.

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the examination of forms or classes in schools.) A second Intermediate examination is also held in September, at which those candidates only may present themselves who have received permission from the General Board of Studies. Supplementary Final examinations in arts and in science are held in December, open to those candidates only who have received special permission from the Board of Studies.

Degree of B.A. or B.Sc. with Honours

8. Candidates for the degree of B.A. or B.Sc. with Honours are required to have passed three years (subsequent to matriculation) in a College of the University, in attendance on certain prescribed courses of study in the Honours School selected. They must present themselves for the examination at the end of the third year from the time when they entered on the course of instruction in their Honours School.

Such candidates are required to pass two examinations, (1) the Preliminary examination, (2) the examination for the degree.

Candidates may enter for the Preliminary before entering on their three years' course of instruction in Honours; they are in any case required to pass it not less than two years before the examination for the degree. Certificates of first year's attendance upon an Honours course qualify for admission to the Preliminary examination.

9. Candidates who fail to obtain Honours are allowed, under certain regulations, to offer themselves for examination for an ordinary degree.

Bachelors of Arts or Science who have taken an ordinary degree may pass on to an Honours degree by at once proceeding with the courses prescribed for the last year or last two years of any of the Honours Schools.

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DEGREE OF BACHELOR OF ARTS

I. Ordinary Degree

Preliminary

[This examination is accepted by the General Medical Council, provided that Latin and either Greek or a Modern Language have been included. It is also accepted by the Incorporated Law Society, provided that Latin has been included; and candidates placed in the First Division, if otherwise duly qualified, are exempted from a year of service under Articles of Clerkship. It is also accepted in lieu of Preliminary or Entrance examination by the Council of Legal Education, and the Society of Chartered Accountants. By Article 115 (*d*) of the Education Department Code, candidates who pass in the First Division may be admitted to Training Colleges as Queen's Scholars.]

Candidates presenting themselves for the Preliminary examination are required to satisfy the examiners in :—

1. *English Language and History:* (*a*) English essay; (*b*) elements of English grammar, including outlines of the general history of the English language; (*c*) outlines of English history.
2. *Mathematics:* (*a*) Arithmetic; (*b*) Euclid, i-iii, vi, 1-19 and 33; (*c*) Algebra to quadratic equations (inclusive) with arithmetical and geometrical progressions.

3, 4, 5. *Three* of the following subjects, *one* of which must be a language :—

i. *Greek:* (*a*) One prose and one verse book, *or* passages from unprepared books, with accompanying grammar questions; (*b*) Grammar*; (*c*) translation at sight of easy Greek passages into English.

ii. *Latin:* (*a*) One prose and one verse book, *or* passages from unprepared books, with accompanying grammar questions; (*b*) Grammar*; (*c*) translation at sight of an easy Latin passage into English; (*d*) translation of easy sentences from English into Latin.

* Candidates must satisfy the Examiners in this part of the examination.

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iii. *French:* (*a*) Grammar*; (*b*) translation from two prescribed French books, *or* passages from unprepared books, with accompanying grammar questions; (*c*) translation at sight of French prose into English; (*d*) translation of English passages into French.

iv. *German:* (*a*) Grammar*; (*b*) translation from two prescribed German books, *or* passages from unprepared books, with accompanying grammar questions; (*c*) translation at sight of easy German prose into English; (*d*) translation of English sentences into German.

v. Any other modern language, permission to present which has been obtained from the Board of Studies.†

vi. *Elementary Mechanics:* The elementary portions of statics, kinetics, and the properties of liquids and gases, including—(*a*) laws of motion; (*b*) uniform acceleration; (*c*) composition and resolution of forces in one plane; (*d*) moments of forces; (*e*) work and energy; (*f*) centre of gravity; (*g*) uniform circular motion; (*h*) simple pendulum; (*i*) direct impact; (*j*) fluid pressure; (*k*) specific gravity; (*l*) Boyle's law.

vii. *Elementary Chemistry:* General properties of matter; chemical combination and decomposition; preparation, classification, and chemical behaviour of the chief elements and their compounds—especially of the non-metals; the outlines of chemical theory.

viii. *Geography:*

(*a*) *Physical Geography:* The agents at work on and beneath the surface of the earth; phenomena resulting from earth-heat; distribution of land and water.

* The questions in grammar will not involve more than accidence and elementary syntax. Candidates must satisfy the Examiners in this part of the examination.

† Notice of intention to present this must be made to the University Registrar on or before March 1 of the year in question.

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(*b*) *Political and Commercial Geography:* Political and economic effects of natural features and conditions; outlines of geography of the British Empire (including historical geography); political and commercial geography of the United Kingdom.

Attendance

Certificates of attendance are not required to include all the subjects of examination, but must show that the candidate has attended for a prescribed minimum number of hours classes required by the regulations of the University. At present the number of hours is required to average ten per week throughout the session.

Special Books for 1901

GREEK: Aeschylus, *Prometheus Vinctus*; Lucian, *Charon* and *Timon*.
LATIN: Cæsar, *de Bello Civili*, i. cc, 1-55; Vergil, *Aeneid*, ii.
FRENCH: Mme. de Witt, *Derrière les Haies*; Labiche et Jolly, *La Grammaire*.
GERMAN: W. Hauff, *die Karavane*, pp. 1-4, 29-49, 109-116 (ed. H. Hager); Lessing, *Fabeln*, pp. 1-22 (ed. K. Breul).
ITALIAN: Rossetti, *Cento aneddoti Italiani*; Ferrari, *Dante a Verona*.

Intermediate

Candidates presenting themselves for the Intermediate examination for the degree of Bachelor of Arts are required to satisfy the examiners in—

1. *Pure Mathematics* or *Logic:*
   i. *Pure Mathematics:* (*a*) Elementary solid geometry (including straight lines, planes, and solid angles; the simpler properties of the parallelepiped, prism, cone, cylinder, and sphere, with the mensuration of these solids; (*b*) plane trigonometry to solution of triangles (inclusive).
   ii. *Logic:* Deductive and inductive logic.
2. *Ancient History* (outlines of Greek and Roman history); or *Modern History* (outlines of mediæval or modern history).

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3, 4. *Two* of the following languages, *one* of which must be Greek or Latin :

i. *Greek :* (*a*) One prose and one verse book ; (*b*) translation at sight from Greek into English ; (*c*) translation of simple English sentences into Greek.

ii. *Latin :* (*a*) One prose and one verse book ; (*b*) translation at sight from Latin into English ; (*c*) translation of English sentences into Latin.

iii. *French :* (*a*) One or more prescribed books in prose or verse, with questions in grammar ; (*b*) translation at sight from French prose and verse into English ; (*c*) translation of easy English passages into French ; (*d*) dictation.

iv. *German :* (*a*) One or more prescribed books in prose or verse, with questions in grammar ; (*b*) translation at sight from German prose or verse into English ; (*c*) translation of English sentences into German ; (*d*) dictation.

v. *Italian :* (*a*) One or more prescribed books in prose or verse, with questions in grammar ; (*b*) translation at sight from Italian prose and verse into English ; (*c*) translation of easy English passages into Italian ; (*d*) dictation.

vi. *English :* (*a*) History of the English language ; (*b*) early English prose : books and passages selected from works before the close of the fourteenth century.

5. *Applied Mathematics*, or *Physics*, or *English Literature*, or *Hebrew*, or *one* of the subjects named in 1, 2, 3, or 4, not already selected.

i. *Applied Mathematics :* (*a*) Statics and kinetics of a particle as far as they can be taken without differential and integral calculus ; (*b*) hydrostatics.

ii. *Physics :* (*a*) The properties of matter ; the chief phenomena of sound, heat, light, electricity, and magnetism, treated in an elementary manner ; (*b*) practical physics.

iii. *English Literature :* (*a*) Questions on selected works of at least two authors ; (*b*) questions on the

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history of a period of English literature covering at least one of the selected works; (*c*) an essay on some subject connected with the prescribed period.

iv. *Hebrew:* (*a*) A prescribed portion of Genesis; (*b*) translation of Hebrew sentences into English; (*c*) translation of easy English sentences into Hebrew; (*d*) elements of Hebrew grammar.

Attendance

Candidates for the Intermediate must present certificates of having passed the Preliminary, and of having attended, in a College of the University, a course of study approved by the University, and extending over at least one academic year, in *each* of the five selected subjects.

Special Books for 1901

HEBREW: Genesis, xxxvii and xxxix-xlii inclusive.
GREEK: Lysias, *Contra Eratosthenem*; Xenophon, *Hellenica*, ii, cc. 3, 4; Homer, *Iliad*, xxi, xxii.
LATIN: Vergil, *Georgics*, i, ii; Livy, vi.
FRENCH: Alfred de Musset, *Morceaux choisis* (prose), ed. Hachette.
GERMAN: E. von Wildenbruch, *Harold*.
ITALIAN: Foscolo, *Lettere di Jacopo Ortis*; Alfieri, *Antigone*.
ENGLISH LANGUAGE (HISTORY OF): Sweet's Anglo-Saxon Primer; Morris and Skeat's Specimens, vol. i, nos. 5 (the Ormulum), 6 (Layamon's Brut). Early English: Sweet's Anglo-Saxon Reader (sections 1-10).
ENGLISH LITERATURE: Period, 1557-1616; Sidney, *Defence of Poesy*; Poems of Drayton and Daniel (as selected by Beeching); Shakespeare, *King Lear*; Beaumont and Fletcher, *Knight of the Burning Pestle*.
MODERN HISTORY: Outlines of General History, A.D. 1494-1815.

Final

Candidates presenting themselves for the Final examination for the degree of Bachelor of Arts are required to satisfy the examiners in—

1. *English Literature:* (*a*) Questions on selected works of at least three authors; (*b*) questions on the history of a period of English literature covering at least two of the selected works; (*c*) an essay on some subject connected with the prescribed period; (*d*) questions involving a general knowledge of English literature.

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2. *Greek* or *Latin*, provided that candidates taking two modern languages in 3, 4, may substitute a third modern language for either Greek or Latin.
   i. *Greek* :* (*a*) *Two* of the following: (1) a prose book; (2) a verse book; (3) a prescribed portion of the Greek Testament; (4) a prescribed portion of the Greek Fathers; (*b*) translation at sight from Greek into English; (*c*) translation of simple English prose into Greek.
   ii. *Latin* :* (*a*) One prose and one verse book; (*b*) translation at sight from Latin into English; (*c*) translation of easy English prose into Latin.

3, 4. *Two* of the following :—
   i. *Greek* or *Latin*, provided that the candidate does not present this subject under 2.
   ii. *French Language and Literature* :* (*a*) Translation from a prescribed French book, with questions in grammar; (*b*) translation at sight of French prose and verse into English; (*c*) translation of English into French; (*d*) a prescribed period of French literature.
   iii. *German Language and Literature* :* (*a*) Translation from a prescribed German book, with questions in grammar; (*b*) translation at sight of German prose and verse into English; (*c*) translation of easy English prose into German; (*d*) a prescribed period of German literature.
   iv. *Italian Language and Literature :* (*a*) Translation from a prescribed Italian book; (*b*) translation at sight of Italian prose and verse into English; (*c*) translation of English into Italian; (*d*) elements of Italian historical grammar, with a short prescribed period of Italian literature.
   v. *English Language :* (*a*) Early English : with especial reference to the poetical literature before the Norman Conquest; (*b*) Gothic : some portion of Ulfilas' translation of the Bible.

* Candidates are required to show reasonable proficiency in unprepared work.

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vi. *History: Two* of the following—(*a*) Greek: a prescribed period of Greek history; (*b*) Roman: a prescribed period of Roman history; (*c*) Modern: a prescribed period *either* of English or of modern continental history; (*d*) Ecclesiastical: a prescribed portion of Ecclesiastical history; (*e*) Economic: a period of English economic history.

vii. *Two* of the following—(*a*) Political science: the nature and chief forms of the State, the functions and organs of government, with a book or books to be prescribed from year to year; (*b*) Greek history: provided the candidate does not present this subject under vi; (*c*) Roman history: provided the candidate does not present this subject under vi; (*d*) Modern history: provided the candidate does not present this subject under vi.

viii. *Political Economy.* Principles of political economy; descriptive economics.

ix. *Pure Mathematics:* (*a*) Analytical plane geometry, up to but not including the general equation of the second degree; (*b*) the more elementary portions of the differential and integral calculus, and of differential equations (ordinary).

x. *Applied Mathematics:* (*a*) Statics of a particle and of a rigid body (exclusive of attractions); (*b*) hydrostatics; (*c*) kinetics of a particle and of a rigid body (elementary).

xi. *Philosophy:* Psychology and ethics.

xii. *History of Philosophy: Either* general history of Greek and Roman philosophy, with books or portions of books to be prescribed from year to year; *or* general history of modern philosophy, with books or portions of books to be prescribed from year to year.

xiii. *Hebrew:* (*a*) A prescribed portion of the poetic or prophetic books; (*b*) translation at sight from Hebrew passages into English; (*c*) translation of

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English sentences into Hebrew; (*d*) elements of Hebrew grammar and syntax.

Attendance

Candidates for the Final must present certificates of having passed the Intermediate, and of having attended, in a College of the University, a course of study approved by the University, and extending over at least one academic year in each of the four selected subjects.

Special Books for 1901

HEBREW: *Ezekiel* i-xxiv.

GREEK: Plato, *Republic*, viii, ix; Sophocles, *Philoctetes*. Greek Testament: *St. Paul's Epistle to the Romans*.

LATIN: Tacitus, *Annals*, i; Juvenal, *Satires*, i, iii, iv.

FRENCH: Boileau, *Art Poétique*. Period: Les grands prosateurs du 17me siècle.

GERMAN: Goethe, *Egmont*. Period: Goethe's Life and Works.

ITALIAN: Guerrazzi, *Francesco Burlomacchi*. Period: Sixteenth Century.

ENGLISH LANGUAGE: Sweet's Anglo-Saxon Reader (sections 20, 21, 24, 29); Beowulf, vv. 1888-end. Gothic: Wright's Gothic Primer.

ENGLISH LITERATURE: Period, 1557-1637. Sidney, *Defence of Poesy*; Poems of Daniel and Drayton (as selected by Beeching); Shakespeare, *King Lear*; Beaumont and Fletcher, *Knight of the Burning Pestle*, *The Two Noble Kinsmen*; Earle, *Microcosmographie*.

MODERN HISTORY: English History, A.D. 1485-1603.

ANCIENT HISTORY: Greek History, down to B.C. 431; Roman History, B.C. 133-A.D. 14.

ECONOMIC HISTORY: Economic History of England, A.D. 1422-1603.

ECCLESIASTICAL HISTORY: History of the Christian Church during the Eighteenth Century.

HISTORY OF ANCIENT PHILOSOPHY: Plato, *Republic*.

HISTORY OF MODERN PHILOSOPHY: Leibnitz, *Selections* (Clarendon Press), and Berkeley, *Principles of Human Knowledge*.

II. HONOURS COURSES*

The degree of Bachelor of Arts with Honours is granted in the following Schools:—

1. Classics.
2. History.
3. English language and Literature.
4. Modern languages and Literatures.
5. Philosophy.

* The Board of Studies will be prepared to consider applications from individual candidates who may desire to read for Honours in more than one school for relaxation of the regulations concerning attendance; also from those who, for special reasons, may desire to distribute over more than one year the lectures required by the regulations for any one year.

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I. School of Classics

Subjects of Examination

1. Translation from Greek books, previously specified.
2. Translation from Latin books, previously specified.
3. Questions and essays upon the subject matter of the specified books in Greek and Latin.
4. Translation at sight from Greek authors.
5. Translation at sight from Latin authors.
6. Translation from English into Greek prose, with questions on Greek grammar.
7. Translation from English into Latin prose, with questions on Latin grammar.
8. Greek and Roman history, literature, and antiquities.
9. Greek and Latin historical grammar and philology.
10. Greek and Roman philosophy.
11. Translation into Greek and Latin verse.

Note.—No candidate will be expected to take more than *two* of the papers 8, 9, and 10; nor will paper 11 be necessarily requisite for a place in the first class.

Attendance

Note.—By 'Course' is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended during three academical years courses of instruction in the subjects of the school, averaging not less than twelve hours a week for the first two years, and ten hours a week for the third year; provided always that such courses shall include courses approved by the Board of Studies in two out of the three subjects of history, philology, and ancient philosophy.

Prescribed Books for 1901 and 1902

GREEK: Homer, *Iliad*, xxi-xxiv, *Odyssey*, ix-xii; Pindar, *Olympian Odes*; Aeschylus, *Oresteia*; Sophocles, *Philoctetes*, *Trachiniae*, *Electra*; Aristophanes, *Knights*, *Clouds*, *Wasps*; Herodotus, viii, ix; Thucydides, i, ii; Demosthenes, *Philippics*, i-iii, *De Corona*; Plato, *Republic*; Aristotle, *Ethics*, i, ii.

LATIN: Plautus, *Captivi*, *Miles Gloriosus*; Terence, *Phormio*, *Adelphi*; Lucretius, i, iii, v; Catullus (Palmer's Selections); Vergil; Horace; Livy, vii, viii, ix; Cicero, *Academics*, *Pro Sestio*, *Second Philippic*, *Epistles* (Tyrrell's Selections, i-xlviii); Tacitus, *Annals*, i, *Histories*, i, *Agricola*; Juvenal, *Satires*, i, iii-v, x, xi, xiv.

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2. School of History

Subjects of Examination

(Ten Papers)

1, 2. General history and geography.
3, 4. English (including constitutional) history.
5. An essay.

6, 7, 8, 9. Each candidate will be examined in two selected subjects, two papers being given to each subject. Of the subjects from which the candidate is to select, one at least will be taken from English, one from ancient, one from general mediæval, one from general modern history. An economic subject may be taken in lieu of the second subject. In these papers some knowledge of original sources will be required.

10. A general paper. This paper will include questions on English literature, archæology, political economy and economic history, political science.

Attendance

Note.—By 'Course' is meant that recognized by the University for the Honours School.

(1) Candidates are required to present certificates of having attended during three academic years courses of instruction in history averaging not less than six hours a week.

(2) Candidates are required, in addition to the attendance required under (1), *either* to pass the Intermediate examination, *or* to present certificates of having attended during the first and second academic years courses of instruction in subjects, other than history, approved by the Board of Studies, averaging not less than six hours a week, of which three hours a week shall be a language course.

Selected Subjects for 1901

(1) Roman History, B.C. 78-44.
(2) The History of the British Isles from the departure of the Romans to A.D. 731.
(3) England under Edward I, and France under Philip III and Philip IV.
(4) The Hundred Years War.
(5) History of Italy from 1415-1492.
(6) The Age of Henry VIII.
(7) The Age of Louis XIV, 1659-1715.
(8) The History of the English Poor Law.
(9) The Distribution of Wealth.

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3. School of English Language and Literature

Subjects of Examination

(Ten Papers)

1, 2. Specimens of English in its several stages, with questions suggested by them.

3. Outlines of English literature.

4. An essay.

One of the following groups :

Either (a)

5, 6. Specimens of English, with questions suggested by them.

7. History of the English language.

8. Gothic.

9. Icelandic or Old Saxon.

10. Old French.

Or (b)

5, 6. Special period of English literature, with prescribed books.

7, 8. An English author, or selected subject from English literature.

9. History of criticism.

10. A dissertation on some subject selected by the candidate.*

A competent knowledge of Latin and of at least one modern language will be necessary for the attainment of high Honours.

Attendance

Note.—By 'Course' is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended :

Either (a)

(1) During three academic years courses in English language, including the history of the language, early English prose and verse, and Gothic, with *either* Icelandic *or* Old Saxon, averaging not less than three hours a week.

* The subject must be submitted for approval to the Board of Studies. The dissertation must be forwarded to the Registrar before the end of the Lent Term of the year in which the candidate completes his Honours course.

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(2) During two academic years courses of instruction in English literature averaging not less than three hours a week ; and in English or modern history averaging not less than two hours a week.

(3) During two academic years courses of instruction in French or German averaging not less than two hours a week in each subject, and during a third academic year courses of instruction in the history of the French language and literature, and in the history of the German language and literature averaging not less than one hour a week in each subject.

(4) During the first year a course of instruction in Latin or Greek averaging three hours a week, and during the second or third year a course of instruction in comparative philology averaging one hour a week.

Or (*b*)

(1) During three academic years courses of instruction in English literature averaging three hours a week, and during the second and third years additional instruction averaging two hours a week.

(2) During the first academic year a course of instruction in English language averaging three hours a week, and during the second year a course of instruction in English language averaging two hours a week.

(3) During the first two years a course of instruction in English or modern history averaging two hours a week ; and a course of instruction averaging two hours a week in *two* of the following languages : Greek, Latin, French, German, Italian, provided that one ancient and one modern language be selected.

(4) During the third academic year a course of instruction in one of the above languages averaging two hours a week.

Special Books and Periods for 1901 and 1902

PERIOD : 1784-1832.

BOOKS : Blake, Lyrical Poems (excluding the Prophetic Books) ; Crabbe, *The Borough* ; Cowper, *The Task* ; Burns, *Poems chiefly in the Scottish dialect* (Kilmarnock, 1786 ; Scott's Lyrical Poems (excluding narrative) ;

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Lyrical Ballads (1798); Wordsworth, *The Prelude*; Byron, *Selections* (ed. M. Arnold); Shelley, *Prometheus Unbound*, *Adonais*; The Poems of Keats; Landor, *Selections* (ed. Colvin); the first five Waverley Novels; the Novels of Jane Austen; Peacock, *Crotchet Castle* and *The Misfortunes of Elphin*; the Critical Works of Lamb and Coleridge; Hazlitt, *Characters of Shakespere's Plays*; Carlyle, *Essays* on *Scott* and *Burns*; Lockhart, *Life of Burns*.

SPECIAL AUTHOR: *Shakespere*.

Books on Criticism and its History, suggested for study: Aristotle, *Poetics*; Horace, *Ars Poetica*; Longinus, *de Sublimitate*; Dante, *de Vulgari Eloquio* ii; du Bellay, *Défense et Illustration de la Langue française*; Sidney, *Defence of Poesy*; Ben Jonson, *Discoveries*; Dryden, *Critical Works*; Boileau, *l'Art poétique*; Lessing, *Laocoön* and *Hamburgische Dramaturgie*; Goethe, *Criticisms on English Writers*; Sainte-Beuve, selected *Causeries* (ed. Saintsbury); Shelley, *Defence of Poesy*; Coleridge, Lectures on Literature (various) and criticisms in *Biographia Literaria*; Arnold, *Essays in Criticism*, First Series; Charles Lamb, *Literary Criticisms*; St. Evremond's critical writings; Fénelon, *Lettre à l'académie française*.

4. School of Modern Languages and Literatures

Subjects of Examination

Candidates are required to present themselves for examination in *two* of the three subjects, I, II, III.

I. *French*: (*a*) Six papers: (1) composition and essay, the subjects for the latter to fall within the range of the prescribed books and periods; (2) translation of unseen passages, with questions on literature suggested by the passages; (3) translation from set books (after 1500); (4) a period or periods of literature (after 1500); (5) set books in old French; (6) historical grammar.

(*b*) Oral examination.

II. *German*: (*a*) Six papers: (1) composition and essay, the subjects for the latter to fall within the range of the prescribed books and periods; (2) translation of unseen passages, with questions on literature suggested by the passages; (3) translation from set books (after 1500); (4) a period or periods of

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literature (after 1500); (5) set books in Old and Middle High German; (6) historical grammar.

(*b*) Oral examination.

III. *English:* Six papers: (1, 2) Translation of unseen passages of English and of passages from Gothic and Old French, with questions suggested by the passages; (3) translation from prescribed English books, with questions suggested by the passages; (4) a period of literature; (5) essays and questions (literature); (6) history of the language and historical grammar.

Attendance

Candidates are required to present certificates of having attended *two* of the following :—I, II, III.

I. *French:*

(1) For two years classes in French (other than the Preliminary classes) of not less than two hours a week in each year.

(2) For three years a course of French literature of not less than one hour a week.

(3) For three years an advanced course of Old French, with historical grammar, of not less than two hours a week during each of the first two years, and three hours a week for the third year.

II. *German:*

(1) For two years classes in German (other than the Preliminary classes) of not less than two hours a week in each year.

(2) For three years a course of German literature of not less than one hour a week.

(3) For three years an advanced course of Old and Middle High German, with Gothic and historical grammar, of not less than two hours a week during each of the first two years, and three hours a week for the third year.

III. *English:*

(1) *Language.* During the first year, a course on the history of the language of not less than two hours a week, and a course of translation of not less than one hour a week. During the second year, a course

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of translation of not less than two hours a week, and a course of Gothic (if not attended under II), or of French (if not attended under I), of not less than one hour a week. During the third year, a course of translation of not less than two hours a week, and an advanced course of not less than one hour a week.

(2) *Literature.* During one year, a course of instruction in English literature, averaging not less than three hours a week. During two other years, courses of instruction in English literature, together amounting to an average of not less than four hours a week.

Candidates are also required to present certificates of having attended, during two years, other courses of instruction of not less than four hours a week, which must include English literature (if not attended under III), English or modern history, and Latin. Any other course selected must be approved by the Board of Studies.

Special Books and Periods

English

For 1901

Anglo-Saxon translation of Bede's History; The Legend of St. Andrew; The Homily on St. Andrew (Blickling Homilies); *The Poems on the Phenix, the Panther, and the Whale;* an *old English Bestiary* (E. E. T. Soc.); *Beowulf*, vv. 1888-end; Layamon's *Brut* (vv. 25525-28651); Chaucer's *Canterbury Tales (Prologue, Knight's Tale, Man of Law's Tale.*

PERIOD: 1784-1852.

For 1902

Alfred's *Translation of Boethius*; the *Poems on the Phenix, the Panther, and the Whale;* an *old English Bestiary* (E. E. T. Soc.); *Beowulf*, vv. 1888-end; Layamon's *Brut*, (vv. 25525-28651); *The Battle of Maldon, The Exodus, The Story of Genesis and Exodus* (E. E. T. Soc.); Wicklif's *Gospel of St. Matthew.*

PERIOD: 1557-1616.

French

For 1901 and 1902

E. Koschwitz, *Les plus anciens monuments de la langue française;* G. Paris et E. Langlois, *Chrestomathie du Moyen âge; Vie de Saint Alexis* (Paris ed.); A. Darmesteter, *Morceaux choisis des écrivains du 16e siècle* (prose and verse); Descartes, *Discours de la Méthode;* La Rochefoucald, *Maximes;* Corneille, *Le Cid;* Racine, *Phédre;* Molière, *Le Tartuffe;* Victor Hugo (1) *Préface de Cromwell,* (2) *les Orientales;* Lamartine, *Premières Méditations.*

PERIODS: (1) Les classiques du 17e siècle; (2) Victor Hugo et les origines de l'Ecole Romantique.

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German

For 1901 and 1902

Braune, *Althochdeutsches Lesebuch* (4th edition), ii-iv, vi-ix, xii, xiv-xviii, xxi, xxiii, xxiv, xxviii-xxxi, xxxii (1-4, 8-12, 23-27, 41-42), xxxv, xxxvi, xxxix, xli,; *Kudrun*, Av. ix-xxxii; *Gottfried von Strassburg*, i, viii, x, xi; *Mittelhochdeutsche Lyrik und Didaktik*, selection (O. Güntter, Sammlung Göschen, no. xxiii); *Schriftsteller des 16ten Jahrhunderts*, selection (L. Pariser, Sammlung Göschen, no xxiv); *Lyrik des 17ten und 18ten Jahrhunderts bis auf Klopfstock*, selection (Ellinger, Sammlung Göschen, no. xxv); Goethe, *Urfaust Götz von Berlichingen, Balladen*; Goethe-Schiller, *Xenien*; Schiller, *Wilhelm Tell, Braut von Messina, Ueber naive und sentimentalische Dichter*; Lessing, *Nathan der Weise, Wie die Alten den Tod gebildet*; Herder, *Cid*; Grillparzer, *Sappho*.

PERIOD: Die zweite Klassische Periode.

5. School of Philosophy

Subjects of Examination

1. Logic, deductive and inductive.
2. Psychology, including the history of the chief doctrines.
3. Theory of ethics, and history of ethical systems.
4. History of philosophy, ancient and modern.
5. *Either* advanced psychology, *or* moral and political philosophy.
6. *One* of the following periods or authors: (*a*) Greek philosophy before Socrates; (*b*) Socrates and Plato; (*c*) Aristotle; (*d*) Post-Aristotelian philosophy; (*e*) Descartes, Malebranche, Spinoza; (*f*) Spinoza and Leibnitz; (*g*) English philosophy from Locke to Hume, with reference to Bacon and Hobbes and to Reid and the Scottish philosophy; (*h*) Kant.

Attendance

Note.—By 'Course' is meant that recognized by the University for the Honours School.

Candidates are required to present certificates—

(1) Of having attended during the first year of their Honours course the classes for the Intermediate examination for the ordinary degree of B.A. or B.Sc., logic having been one of the subjects thereof.

(2) Of having attended, in both the second and the third year of their Honours course, courses of lectures in philosophy (including logic, psychology, ethics, and

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history of philosophy), the number of lectures included in these courses amounting to not less than an average of four hours a week in each year.

(3) Of having attended during the second and third year courses of lectures on other subjects, the number of lectures amounting to not less than an average of three hours a week during each year.

DEGREE OF MASTER OF ARTS

The degree of M.A. is conferred, on payment of the proper fee, upon registered Bachelors of Arts when of three years' standing from the date of their graduation as Bachelors.

Bachelors of Arts who have graduated with Honours are not required to present themselves for any further examination for the degree of M.A. Bachelors of Arts who have obtained the ordinary degree can qualify for the M.A. by passing the requisite examination.* No conditions of attendance upon lecture courses are imposed by the University, and no interval or limit of time is prescribed between graduation and admission to the examination qualifying for the degree of M.A.

Subjects of Examination

I. *In Languages: Two* of the following subjects, in each of which three papers will be set :—

i. *Greek:* (*a*) Translation from Greek books selected from those prescribed for Honours in Classics; (*b*) questions upon the subject matter of the specified books, and translation at sight; (*c*) translation from English into Greek prose.

ii. *Latin:* (*a*) Translation from Latin books selected from those prescribed for Honours in Classics; (*b*) questions upon the subject matter of the specified books, and translation at sight; (*c*) translation from English into Latin prose.

* Notice for this examination must be given to the Registrar and the fee paid on or before March 31.

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iii. *French:* (*a*) Translation from prescribed French books into English, including easy passages from mediæval French, with questions upon the prescribed books and historical grammar; (*b*) translation at sight from French into English, and from English into French; (*c*) period of French literature, and essay in French bearing on the subject prescribed.

iv. *German:* (*a*) Translation from prescribed German books into English, including easy passages in Middle High German, with questions upon the prescribed books and historical grammar; (*b*) translation at sight from German into English, and from English into German; (*c*) period of German literature, and essay in German bearing on the subject prescribed.

v. *Italian:* (*a*) Translation from prescribed Italian books into English, including some portion or portions of the *Divina Commedia*, with questions upon the prescribed books and historical grammar; (*b*) translation at sight from Italian into English, and from English into Italian; (*c*) period of Italian literature and essay in Italian bearing on the subject prescribed.

II. *In English:*

(*a*, *b*) Specimens of English in its several stages, with questions suggested by them; (*c*) outlines of English literature, and *either* (*d*, *e*) specimens of English, with questions suggested by them; (*f*) Gothic, *or* (*d*) an essay; (*e*, *f*) a special period of English literature, with prescribed books.

III. *In History: Either* (*a*, *b*) general history and geography; (*c*, *d*) English (including constitutional) history; (*e*) an essay; *or* (*a*, *b*) a subject selected from the list of books prescribed in the Honours School of History, see p. 50; (*c*, *d*) a second subject selected from the same list; (*e*) an essay.

IV. *In Political Economy:* (*a*) the economic history of England; (*b*, *c*) the economic special subject (or,

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if there be more than one, one of them) for Honours in History, see p. 38 ; (*d*) history of economic theory; (*e*) public finance.

V. *In Philosophy :*

1, 2, 3. *Three* of the following : (*a*) Logic, deductive and inductive ; (*b*) psychology, including the history of the chief doctrines ; (*c*) theory of ethics, and history of ethical systems ; (*d*) history of philosophy, ancient and modern ; (*e*) *either* advanced psychology, *or* moral and political philosophy.

4. *One* of the following periods or authors : (*a*) Greek philosophy before Socrates ; (*b*) Socrates and Plato ; (*c*) Aristotle ; (*d*) Post-Aristotelian philosophy ; (*e*) Descartes, Malebranche, Spinoza ; (*f*) Spinoza and Leibnitz ; (*g*) English philosophy, from Locke to Hume, with reference to Bacon and Hobbes, and to Reid and Scottish philosophy ; (*h*) Kant.

Prescribed Books for 1901

GREEK : Homer, *Odyssey*, ix-xii ; Aeschylus, *Agamemnon ;* Sophocles, *Philoctetes ;* Thucydides, i ; Plato, *Republic*, viii, ix ; Demosthenes, *de Corona ;* Aristophanes, *Wasps*.

LATIN : Plautus, *Captivi ;* Lucretius, v ; Horace, *Satires ;* Vergil, *Georgics* ; Cicero, *Philippics*, ii, *Letters* (Tyrrell's Selection, 1-30) ; Livy , ix ; Tacitus, *Annals*, i ; Juvenal, *Satires*, i, iii, iv, x.

FRENCH : *Books*—G. Paris et Langlois, Chrestomathie du Moyen Age ; A. Darmesteter, *Morceaux Choisis des Ecrivains du* 16^e *siècle* (prose et vers) ; La Rochefoucault, *Maximes ;* Molière, *Le Tartuffe ;* Lamartine, *Premières Meditations*.

Period : Les grands prosateurs du 17^me siècle.

GERMAN : *Books—Walther von der Vogelweide* (selection ed. O. Gunther, Sammlung Göschen No. 23) ; Kudrun, Stanza 563-950, *Schriftsteller des* 16 *Jahrheuderts* (selection) ed. L. Pariser, Sammlung Göschen, No. 24) ; Schiller, *Wilhelm Tell*, *Braut von Messina*, *Balladen* ; Goethe, *Egmont*, *Faust*, part i ; Lessing, *Nathan der Weise ;* Grillparzer, *Sappho*.

Period : Goethe's Life and Works.

ITALIAN : *Books*—Dino Compagni, *Cronaca Fiorentina ;* Poliziano, *Stanze* and *Orfeo ;* Boccacio, *Novelle Scelte ;* Dante, *Inferno*, v, x, xxiii ; *Purgatorio*, i-xxvii (inclusive) ; *Paradiso*, vi, xxxi ; Tasso, *Aminta ;* Giordani, *Panegirico di Antonio Canova*.

Period : Literature of the Fourteenth and Fifteenth Centuries.

ENGLISH LANGUAGE AND LITERATURE : The periods and books drawn from them prescribed in the Honours School for 1901, see p. 52.

HISTORY : The periods prescribed in the Honours School for 1901, see p. 50.

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DEGREE OF DOCTOR OF LETTERS

See Vict. Univ. Cal., pp. 86, 147.

DEGREE OF BACHELOR OF SCIENCE

I. Ordinary Degree

Preliminary

(As for the Degree of B.A., see p. 29).

Intermediate

Candidates presenting themselves for the Intermediate examination for the degree of Bachelor of Science are required to satisfy the examiners in—

1, 2, 3. *Three* of the following (provided that of the three subjects selected *one* shall be pure mathematics, *or* applied mathematics, *or* biology) :—

i. *Pure Mathematics:* (*a*) Elementary solid geometry (including straight lines, planes, and solid angles; the simpler properties of the parallelepiped, prism, cone, cylinder and sphere, with the mensuration of these solids); (*b*) algebra; (*c*) plane trigonometry to solution of triangles (inclusive); (*d*) analytical geometry of the straight line and circle.

ii. *Applied Mathematics:* (*a*) Statics, and kinetics of a particle as far as they can be taken without differential and integral calculus; (*b*) hydrostatics.

iii. *Physics:* (*a*) The properties of matter, the chief phenomena of sound, heat, light, electricity, and magnetism, treated in an elementary manner; (*b*) practical physics.

iv. *Chemistry:* (*a*) Inorganic chemistry, with special reference to the non-metals; (*b*) introduction to organic chemistry; (*c*) practical chemistry, including the qualitative analysis of mixtures of not more than two simple mineral salts; the

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detection of the more common organic compounds; and exercises in simple preparations.

v. *Biology**: (*a*) Animal morphology: (*b*) vegetable morphology, physiology; (*c*) laboratory work.

vi. (1) *Applied Mechanics*: (*a*) Theory of simple structures; (*b*) strength of materials; (*c*) kinematics of machinery.

(2) *Drawing*: (*a*) Machine drawing; (*b*) practical geometry.

vii. (1) *Surveying*: (*a*) Plane geodesy or surveying; levelling; hydrography; estimating; (*b*) descriptive engineering—earthwork and masonry.

(2) *Drawing*: (*a*) Machine drawing; (*b*) practical geometry.

Attendance

Candidates for the Intermediate B.Sc. must present certificates of having passed the Preliminary, and of having attended, in a College of the University, a course of study approved by the University, and extending over at least one academic year in *each* of the selected subjects.

Final

Candidates presenting themselves for the Final examination for the degree of Bachelor of Science are required to satisfy the examiners in—

1, 2. *Two* of the following—

i. (1) *Pure Mathematics*: (*a*) Analytical plane geometry, up to but not including the general equation of the second degree; (*b*) the more

* The questions in biology will have reference to—

a. The fundamental facts and laws of animal morphology, together with the elements of comparative physiology and histology, as illustrated, by *ten of the following twelve types*:—*Amœba, Paramœcium, Vorticella, Hydra, Lumbricus, Arenicola, Astacus, Anodon, Mytilus, Scyllium, Rana, Lepus*; and the outlines of the developmental history of *Amphioxus, Rana, and Gallus*.

b. The fundamental facts and laws of the morphology and life-history of plants (together with the elements of vegetable physiology and histology) as illustrated by the following types:—*Bacterium, Saccharomyces, Eurotium, Vaucheria, Fucus, Polytrichum, Aspidium, Pinus, Scilla, Lamium, Tilia*.

In the practical examination candidates will be required to make dissections or microscopical preparations of the animals and plants in the above list; and also to recognize and describe specimens or microscopical preparation of or from the same.

Candidates may, at the discretion of the Examiners, be examined *vivâ voce* during the practical examination.

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elementary portions of the differential and integral calculus, and of differential equations (ordinary).

(2) *Applied Mathematics:* (*a*) Statics of a particle and of a rigid body (exclusive of attractions); (*b*) hydrostatics; (*c*) kinetics of a particle and of a rigid body (elementary).

ii. *Physics:* (*a*) Physical laws and principles and the experimental evidence on which they are based; (*b*) practical examination in the laboratory.

iii. *Chemistry:* (*a*) General inorganic and organic chemistry, including chemical theory; (*b*) *one* of the following treated more fully: (1) chemistry of the non-metals; (2) chemistry of the metals; (3) organic chemistry; (*c*) practical chemistry: including qualitative analysis, simple gravimetric and volumetric analysis, and exercises in preparations.

iv. *Zoology:* (*a*) Animal morphology; (*b*) elements of embryology and of systematic zoology; (*c*) laboratory work.

v. *Botany:* (*a*) Elementary tissues of plants; compound organs of nutrition and reproduction; (*b*) vegetable physiology; (*c*) systematic botany and elements of botanical classification; (*d*) laboratory work.

vi. *Physiology:* (*a*) Histology of the animal body; (*b*) systematic physiology of the animal body; (*c*) laboratory work in histology and physiological chemistry, with a practical examination on the more important instruments employed in physiological research.

vii. *Geology:* (*a*) Geology, with practical work; (*b*) *one* of the following:—(1) elementary palæontology; (2) applied geology; (3) mineralogy.

viii. *Mental and Moral Science:* (*a*) Psychology and ethics;
or (*b*) Psychology (more advanced).

ix, x. *Engineering: Two* of the following (A, B, C), provided that if *either* A *or* B has been taken in the Intermediate it must not be repeated: A. (*a*)

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Theory of simple structures; (*b*) strength of materials; (*c*) kinematics of machinery; B. (*a*) plane geodesy or surveying; levelling; hydrography; estimating; (*b*) descriptive engineering —earthwork and masonry; C. (*a*) dynamics of machinery; (*b*) hydraulics; (*c*) the steam-engine; (*d*) complex structures; (*e*) methods of designing structures and machines; together with D. drawing; E. engineering laboratory.

or

xi, xii. (1) *Applied Mechanics:* A. (*a*) Theory of simple structures; (*b*) strength of materials; (*c*) kinematics of machinery; (if A has been taken in the Intermediate examination it must not be repeated, but the candidate may take dynamics of machinery, &c. (as in C of 'ix, x *Engineering*') in its place). D. drawing; E. engineering laboratory.

(2) *Electricity:* (*a*) Theory; (*b*) application; (*c*) practical work.

3. *One* of the following to be presented either at the Intermediate or the Final examination, the standard being that of the Intermediate in either case. (Candidates who take this subject at the Final examination and have been admitted by the Board of Studies to the second Final examination will be examined in this subject in September).

i. **Applied Mathematics.*
ii. *Logic.*
iii. *French language.*
iv. *German language.*
v. *Italian language.*
vi. *English literature.*
vii. †*Applied mechanics.*
viii. †*Surveying.*

Attendance

Candidates for the Final B.Sc. must present certificates of having passed the Intermediate, and of having attended, in a

*Provided the candidate does not present this subject at the Intermediate examination or under i (2) above.

†Provided the candidate does not present this subject at the Intermediate examination or under ix, x, or xi above.

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College of the University, a course of study approved by the University, and extending over at least one academic year in *each* of the selected subjects.

II. Honours Courses*

The degree of Bachelor of Science with Honours is granted in the following Schools:—

1. Mathematics.
2. Engineering.
3. Physics.
4. Chemistry.
5. Zoology.
6. Physiology.
7. Geology, mineralogy, palæontology.
8. Botany.

I. School of Mathematics

Subjects of Examination

(Ten Papers)

1. *Pure Mathematics:* Pure geometry, plane and solid; algebra; theory of equations and determinants; plane trigonometry; spherical trigonometry with simple applications to astronomy; analytical geometry of two and of three dimensions; elements of projective geometry; differential calculus with applications to plane curves; integral calculus; ordinary differential equations; partial differential equations of the first order; finite differences.
2. *Applied Mathematics:* Dynamics of a particle; statics; attractions; dynamics of rigid bodies; hydrostatics; elementary hydrodynamics; elementary theory of sound.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

* The Board of Studies will be prepared to consider applications from individual candidates who may desire to read for honours in more than one school for relaxation of the regulations concerning attendance; also from those who, for special reasons, may desire to distribute over more than one year the lectures required by the regulations for any one year.

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Candidates are required to present certificates of having attended—

1. During three academic years courses in mathematics averaging not less than six hours a week.
2. During the first and second years courses of lectures on at least two other subjects, averaging not less than six hours a week; provided that a candidate may in each year substitute for one of these additional courses laboratory work averaging not less than six hours a week.

2. School of Engineering

Subjects of Examination

(Ten Papers)

1. *Engineering*, including the following subjects, in which *seven* papers will be set :—Linear and angular measurement; plane geodesy or surveying; levelling; hydrography; estimating; descriptive engineering—earthwork and masonry; elementary practical geometry; linear drawing; the theory of concrete forces; the theory of simple structures; the theory of the strength of materials; kinematics of machinery; descriptive engineering—bridges, roofs, and machines; dynamics of machines; hydraulics; the theory of heat and steam-engines; the theory of complex structures; methods of designing structures and machines; application of electricity to engineering.
2. *Mathematics*, in which *three* papers will be set on the following subjects :—(*a*) Analytical plane and solid geometry; (*b*) differential and integral calculus; (*c*) statics, dynamics of a particle, rigid dynamics, hydrostatics.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

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Candidates are required to present certificates of having attended—

1. During three academic years courses in engineering averaging three hours (lectures) a week in the first year, four hours a week in the second year, and four hours a week in the third year, with practical work for about seven hours a week in each year.
2. During two academic years courses of three hours a week in pure mathematics and in experimental mechanics or applied mathematics, and in the third year a course of three hours a week either in pure or in applied mathematics.
3. Two courses of at least two hours a week each throughout one academic year, selected from one or more of the following subjects : physics, chemistry, geology.

3. School of Physics

Subjects of Examination

I. Five Papers :

1, 2. Experimental physics, including chemical physics.

3, 4. Experimental and theoretical physics, requiring a knowledge of the differential and the elements of the integral calculus.

5. *One* of the following : (*a*) Mathematical physics, more advanced portions ; (*b*) technical applications of electricity, requiring a knowledge of the differential and the elements of the integral calculus ; (*c*) some selected portion of physics, to be approved by the General Board of Studies. Candidates offering to be examined under 5 (*c*) will be required to present an original research or thesis on some subject connected with the portion of physics selected for examination. The subject of the research or thesis to be submitted to the General Board of Studies for approval not later than December 1 preceding the examination.

II. Practical examination in the physical laboratory extending over two days.

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Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended—

(*a*) 1. During the first year of the Honours course: physics (three hours a week); applied mathematics (averaging three hours a week); pure mathematics (averaging three hours a week); one other course of three hours a week, for which a day in the physical laboratory may be substituted.

2. During the second year: physics (averaging three hours a week); one day's practical work in the physical laboratory; two other courses (each averaging two hours a week), one of which must be pure or applied mathematics.

3. During the third year: two days' practical work in the physical laboratory; two courses, each averaging two hours a week, for one of which a day in the physical laboratory may be substituted.

(*b*) In the first or second year a lecture course in chemistry, averaging two hours a week.

(*c*) In one of the three years one day a week in the chemical laboratory, or one day a week in the engineering laboratory.

4. School of Chemistry

Subjects of Examination

I. Five Papers:

1. Inorganic chemistry.
2. Organic chemistry.
3. History of chemistry and of chemical philosophy.
4. Physical chemistry.
5. *One* of the following:
   i. Mineralogy and crystallography.

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ii. Technological chemistry.*
iii. Metallurgy.
iv. Sanitary chemistry.
v. Physiological chemistry.
vi. Chemical physics treated experimentally.

II. Practical examination in the laboratory, extending over three days.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended—

1. (*a*) During the first and second years systematic courses on the non-metallic and the metallic elements; (*b*) during the second or third year a systematic course on organic chemistry; (*c*) during the second or third year a course (or courses) on chemical philosophy and physical chemistry; (*d*) during the second or third year a course (or courses) in *one* of the following subjects: mineralogy and crystallography; technological chemistry; metallurgy; sanitary chemistry, physiological chemistry; chemical physics treated experimentally.

2 (*a*) During the first year a course in pure or applied mathematics, and a course in experimental physics (in the case of students who furnish evidence of possessing a satisfactory knowledge of elementary physics); another course may be substituted for experimental physics in 2(*a*) provided physics is taken in that case under 2(*b*); (*b*) during the first or second year one additional course.

* The following are among the subjects included under this head, from which the candidates may select one:—i. Alkali, Sulphuric Acid, and kindred industries; ii. Fuel; iii. Colouring Matters; iv. Dyeing and Printing; v. Distillation of Coal and Coal Tar products; vi. Chemistry of Leather Manufacture.

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3. During the first year the chemical laboratory* for three days a week; during the second year the chemical laboratory for three days a week; and the physical laboratory for one day a week; during the third year the chemical laboratory for five† days a week.

5. School of Zoology

Candidates are required to have passed the Intermediate examination for the ordinary degree of B.Sc., Biology having been one of the subjects thereof.

Subjects of Examination

I. Five Papers:

1-4. Zoology and comparative anatomy (including the more important extinct forms); embryology.

5. *One* of the following:—

i. Geology.
ii. Physiology.
iii. Botany.

II. Practical examination in the laboratory, extending over three days, the third being devoted to the subject taken under 5.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended—

(1) During at least one academic year in the classes required for the Intermediate examination for the ordinary degree of B.Sc.

* Candidates, as above stated, are required to take regular courses of laboratory work; but any candidate who can produce satisfactory evidence that his knowledge is sufficient to make it unnecessary for him to pursue such regular courses shall be allowed, on recommendation of the Departmental Board, accepted by the General Board of Studies, to proceed to more advanced work or to undertake original investigations, and such advanced work or original investigation may be accepted as substitute for the required Honours course of laboratory work provided always that all candidates shall be required to undergo the whole of the Honours examination in laboratory work.

† With the permission of the Board of Studies *one* day a week in another laboratory may be substituted for *one* of these five days.

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(2) During two academic years after the date of passing the Intermediate examination full courses of instruction in zoology, including laboratory* work.†

(3) During part of one academic year a course in embryology; and during one academic year a course in *one* of the following:—(*a*) geology, with practical work; (*b*) physiology, with laboratory work; (*c*) botany, with laboratory work.

6. School of Physiology

Candidates are required to have passed the Intermediate examination for the ordinary degree of B.Sc., Biology having been one of the subjects thereof.

Subjects of Examination

I. Four papers:
   1-3. Animal physiology.
   4. *One* of the following subjects:—Physics, with practical work; organic chemistry, with practical work; comparative anatomy, with practical work; psychology.

II. Practical examination, extending over three days, the third being devoted to the subject taken under 4.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended—

(1) During at least one academic year the classes required

*Candidates, as above stated, are required to take regular courses of laboratory work; but any candidate who can produce satisfactory evidence that his knowledge is sufficient to make it unnecessary for him to pursue such regular courses shall be allowed, on recommendation of the Departmental Board, accepted by the General Board of Studies, to proceed to more advanced work or to undertake original investigations, and such advanced work or original investigation may be accepted as substitutes for the required Honours course of laboratory work, provided always that all candidates shall be required to undergo the whole of the Honours examination in laboratory work.

†Laboratory work in the third year must extend over at least 2½ days per week.

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for the Intermediate examination for the ordinary degree of B.Sc.

(2) During two academic years from the date of passing the Intermediate examination full courses of instruction in physiology, including laboratory* work.†

(3) During one academic year *one* of the following courses:—(*a*) Mathematics, averaging not less than three hours a week, the classes not being junior or elementary; (*b*) physics, with laboratory work, the lectures averaging not less than from two to three hours a week; (*c*) chemistry, with laboratory* work, the lectures averaging not less than three hours a week, and the classes not being junior or elementary; (*d*) human anatomy, with practical work; (*e*) zoology, with laboratory* work, the lectures averaging not less than three hours a week; (*f*) psychology, the lectures averaging not less than three hours a week.

(4) During one academic year courses in *one* of the following:—(*a*) Practical physics, with laboratory* work; (*b*) organic chemistry, with laboratory* work; (*c*) comparative anatomy, with laboratory* work, the lectures averaging not less than two hours a week; (*d*) advanced psychology, the lectures averaging not less than two hours a week.

7. School of Geology, Mineralogy, and Palæontology (Zoological and Botanical)

Candidates are required to have passed the Intermediate examination for the ordinary degree of B.Sc., biology having been one of the subjects thereof.

* Candidates, as above stated, are required to take regular courses of laboratory work; but any candidate who can produce satisfactory evidence that his knowledge is sufficient to make it unnecessary for him to pursue such regular courses shall be allowed, on recommendation of the Departmental Board, accepted by the General Board of Studies, to proceed to more advanced work or to undertake original investigations, and such advanced work or original investigation may be accepted as substitute for the required Honours course of laboratory work, provided always that all candidates shall be required to undergo the whole of the Honours examination in laboratory work.

† Laboratory work in the third year must extend over at least 2½ days per week.

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Subjects of Examination

Branch I—Physical

I. Five papers :
   1, 2. Geology.
   3. Petrology.
   4. *One* of the following :—
      i. Mineralogy.
      ii. Chemistry (inorganic).
      iii. Physics.
      iv. Metallurgy.
   5. A special paper in geology or petrology, or in some branch of physics, chemistry, or metallurgy, bearing on geology or petrology, to be selected by the candidate with the approval of the General Board of Studies.

II. Practical examination, extending over three days, the third being devoted to the subject taken under 4.

Branch II—Biological

I. Five papers :
   1. Geology.
   2. Palæontology.
   3. Special paper on some subject in palæontology, selected by the candidate with the approval of the General Board of Studies.
   4. Zoology.
   5. Palæobotany.

II. Practical examination in geology, palæozoology and palæobotany, and zoology, extending over three days, the third being devoted to zoology.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

Branch I

Candidates are required to present certificates of having attended—

(1) During one academic year the classes required for the Intermediate examination for the ordinary degree of B.Sc.

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(2) During two academic years after passing the Intermediate examination full courses in geology, including laboratory* work, averaging not less than six hours a week.

(3) During one academic year a course in mineralogy.

(4) During the first year after passing the Intermediate B.Sc. examination courses: (*a*) in physics, with laboratory work (one day); (*b*) in chemistry, with laboratory work (one day).

(5) During one academic year a course in one of the following: (*a*) mineralogy, with practical work; (*b*) inorganic chemistry, with practical work; (*c*) physics, with practical work; (*d*) metallurgy, with practical work.

Candidates are also required to present a certificate of having devoted at least one hour a week to work under the direction of the Professor or Lecturer in the special subject presented by them at the examination for Honours.

Branch II

Candidates are required to present certificates of having attended—

(1) During one academic year the classes required for the Intermediate examination for the ordinary degree of B.Sc., including elementary biology.

(2) During two academic years after passing the Intermediate examination, full courses of instruction in geology and palæontology, including practical work.

(3) (*a*) During two terms a course of zoology, with laboratory work, the lectures averaging not less than three hours a week; (*b*) a course of lectures on the zoology of vertebrates, with practical osteology, extending over

* Candidates, as above stated, are required to take regular courses of laboratory work; but any candidate who can produce satisfactory evidence that his knowledge is sufficient to make it unnecessary for him to pursue such regular courses shall be allowed, on recommendation of the Departmental Board, accepted by the General Board of Studies, to proceed to more advanced work or to undertake original investigations, and such advanced work or original investigation may be accepted as substitute for the required Honours course of laboratory work, provided always that all candidates shall be required to undergo the whole of the Honours examination in laboratory work.

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a total of two terms, the lectures averaging not less than three hours a week.

(4) A course of palæobotany, with practical work.

Candidates are also required to present a certificate of having, during the third year, devoted at least one hour a week to work under the direction of the Professor or Lecturer in the special subject presented by them at the examination for Honours.

8. School of Botany

Candidates are required to have passed the Intermediate examination for the ordinary degree of B.Sc., Biology having been one of the subjects thereof.

Subjects of Examination

I. Five Papers :

1-4. Botany : including vegetable anatomy and morphology, vegetable physiology, systematic botany, and the distribution of plants in time and space.

5. *One* of the following :—
   Zoology.
   Geology.
   Physiology.
   Organic chemistry.

II. Practical examination in the laboratory, extending over three days, the third being devoted to the subject taken under 5.

Attendance

Note.—By 'Course,' whether of lectures or laboratory work, is meant that recognized by the University for the Honours School.

Candidates are required to present certificates of having attended—

(1) During at least one academic year the classes required for the Intermediate examination for the ordinary degree of B.Sc.

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(2) During two academic years after the date of passing the Intermediate examination full course of instruction in botany, including laboratory* work.†

(3) During one academic year a course in *one* of the following: (*a*) zoology, with laboratory work; (*b*) geology, with practical work; (*c*) physiology, with laboratory work; (*d*) organic chemistry, with laboratory work.

DEGREE OF MASTER OF SCIENCE

The degree of M.Sc. is conferred, on payment of the proper fee, upon registered Bachelors of Science when of three years' standing from the date of their graduation as Bachelor.

Bachelors of Science who have graduated with Honours are not required to present themselves for any further examination for the degree of M.Sc. Bachelors of Science, who have obtained the ordinary degree, can qualify for the M.Sc. by passing the requisite examination.‡ No conditions of attendance upon lecture courses are imposed by the University, and no interval or limit of time is prescribed between graduation and admission to the examination qualifying for the degree of M.Sc.

Subjects of Examination

i. *In Mathematics:* Analytical geometry, plane and solid, differential and integral calculus, dynamics

* Candidates, as above stated, are required to take regular courses of laboratory work; but any candidate who can produce satisfactory evidence that his knowledge is sufficient to make it unnecessary for him to pursue such regular courses shall be allowed, on recommendation of the Departmental Board, accepted by the General Board of Studies, to proceed to more advanced work or to undertake original investigations, and such advanced work or original investigation may be accepted as substitute for the required Honours course of laboratory work, provided always that all candidates shall be required to undergo the whole of the Honours examination in laboratory work.

† Laboratory work in the third year must extend over at least 2½ days per week.

‡ Notice for this examination must be given to the Registrar and the fee paid on or before March 31.

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and statics of a particle, hydrostatics and rigid dynamics.

ii. *In Engineering:* Surveying and descriptive engineering; theory of structure and strength of materials; designing and drawing; mechanics and kinematics.

iii. *In Physics:* Two papers on experimental physics, including chemical physics; and two papers on experimental and theoretical physics requiring a knowledge of the differential calculus and of the elements of the integral calculus; with one day's practical work.

iv. *In Chemistry:* Three papers on inorganic chemistry, organic chemistry, and on *one* of the following: (*a*) history of chemistry and of chemical philosophy; (*b*) physical chemistry; (*c*) mineralogy and crystallography; (*d*) technological chemistry; (*e*) metallurgy; (*f*) sanitary chemistry; (*g*) physiological chemistry; (*h*) chemical physics treated experimentally, with one day's practical work.

v. *In Zoology:* Two papers on zoology and comparative anatomy (including the more important extinct forms) and on embryology, with one day's practical work.

vi. *In Physiology:* Three papers on animal physiology, with one day's practical work.

vii. *In Geology: Either* three papers on geology and mineralogy (elements), with one day's practical work, *or* three papers on geology and zoology, with one day's practical work.

viii. *In Botany:* Two papers on botany, with one day's practical work.

DEGREE OF DOCTOR OF SCIENCE

See Vict. Univ. Cal., pp. 86, 147.

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DEGREE OF BACHELOR OF LAWS

Candidates for the degree of LL.B. are required to have matriculated, and to have passed the Preliminary* examination, or to have graduated in this or some other University of the United Kingdom,† provided that Latin has formed part of one of the degree examinations.

Preliminary

(As for the degree of B.A., see p. 29.)

Intermediate

Subjects of Examination

1. *Roman Law.*—Institutes of Justinian (omitting book iii, tit. 1-9); Institutes of Gaius (omitting book iii, 1-81); history of Roman law, up to and including the legislation of Justinian.
2. The law and custom of the English constitution.
3. *Jurisprudence.* — Principles of jurisprudence; early history of Institutions.
4. Logic *or* political economy *or* ancient history.

Attendance

Candidates will be required to present certificates of attendance on classes in a College of the University for one year in: (*a*) Roman law; (*b*) the law and custom of the English constitution; (*c*) jurisprudence; (*d*) logic *or* political economy *or* ancient history. Provided that any candidates

* (1) For the present, and until otherwise determined by the University Authorities, Barristers called to the Bar, and Solicitors admitted on the Rolls previous to the 1st of January, 1893, who are desirous of entering for the Intermediate and Final examinations for the degree of LL.B. in the University, will be excused the Preliminary examination of the University.

(2) Applications from persons who shall have been either called to the Bar or admitted on the Rolls previous to the 1st of January, 1896, and who are desirous of entering for the Intermediate and Final examinations for the degree of LL.B. in the University, to be excused the Preliminary examination of the University, will be heard and determined by the General Board of Studies.

† Until 1902, London Matriculation will be accepted in the Faculty of Law in lieu of the Preliminary examination.

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who are already graduates of some other faculty, or of any other University within the United Kingdom, shall not be required to attend classes, or to be examined in logic or political economy or ancient history.

Final

Subject of Examination

English Law. — Candidates will be required to show a general knowledge of: (*a*) Real and personal property, the principles relating to the nature, creation, and devolution of the estates and interests that may be held in real and personal property; (*b*) the principles of the law of contracts; (*c*) the principles of the law of torts; (*d*) the principles of equity; (*e*) *one* of the following, selected by the candidate, of which he will be required to show a detailed knowledge, as well as of the leading cases connected therewith: (1) Succession (testamentary and intestate); (2) Trusts; (3) Bankruptcy; (4) Crimes.

Candidates who desire a place in the first division are expected to offer themselves for examination in *one* of the following subjects*: (*a*) Intermediate law; (*b*) Constitutional law; (*c*) Conflict of laws.

Attendance

1. Candidates for the Final examination will be required to present certificates of having attended, in a College of the University during two years after passing the Intermediate examination, classes in the department of law for not less than five hours a week in one of such years, and four hours a week in the other of such years, provided that students who have been called to the bar or who have been admitted on the rolls as solicitors, and students who are reading in the chambers of a barrister or who are articled to a solicitor, may be admitted to this examination on presenting certificates of having attended

* Candidates for the Final examination in any year should give notice to the Registrar of the subject or subjects selected before the end of the May term in the *previous* year.

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classes in law in a College of the University, for three hours a week during two years after the date of passing the Intermediate examination.

2. Candidates who are already graduates in some other Faculty and desire to proceed to the Final examination, after two instead of three years' attendance on classes in the law department of a College of the University, must attend in the first of such years the classes for the Intermediate examination, and during the first and second years classes in English law for three* hours a week.

3. Candidates who offer themselves for examination in any of the special subjects† (*a*), (*b*), (*c*) are required further to present a certificate of having attended a class in a College of the University in one of such special subjects.

DEGREE OF DOCTOR OF LAWS

See Vict. Univ. Cal., p. 88.

DEGREES IN MEDICINE

For full information regarding medical study and graduation consult the Vict. Univ. Calendar and the special Medical Prospectus.

CERTIFICATES AND DIPLOMAS

1. Certificates for Women

Regulations

1. The certificate examination is open to properly qualified women students of Owens College, Manchester, or of University College, Liverpool, or of Yorkshire College, Leeds, on payment of a fee of £1.

*Candidates may, however, in place of one or two hours a week in the first year attend one or two additional hours a week in the second year.

† Candidates for the Final examination in any year should give notice to the Registrar of the subject or subjects selected before the end of the May term in the *previous* year.

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2. Candidates for the certificate examination are required to furnish certificates of attendance during at least two years upon classes in one of the Colleges of the University, and of attendance upon a course approved by the University for the Final B.A. or B.Sc. ordinary degree in such subject or subjects as they desire to present.

3. Candidates for a certificate will be examined in any one of the following subjects, the standard of the papers in each subject* being that of the Final examination for the ordinary B.A. or B.Sc. degree; but no candidate shall be permitted to present herself as a candidate for a certificate and the degree at the same examination:—*Greek, Latin, French Language and Literature, German Language and Literature, Italian Language and Literature, English Language, English Literature, Ancient and Modern History, Modern History and Political Economy, Political Economy and Economic History, Pure Mathematics, Applied Mathematics, Logic and Philosophy, History of Philosophy, Physics, Chemistry, Zoology, Botany, Physiology, Geology.*

4. Holders of a certificate are admissible to subsequent examination in any of the above subjects of examination other than those in which they have gained certificates, provided that they have complied with the regulations for attendance in regard to such subject or subjects; and their success in such subsequent examination will be notified on their certificates.

5. Candidates for certificates of distinction will be examined in any of the subjects mentioned in §3 for which they shall have presented certificates of attendance satisfactory to the Board of Studies, after the expiration of not less than one year from the date at which they have passed the certificate examination in each subject or after graduation.

Candidates for certificates of distinction who have passed the certificate examination in *Ancient and Modern History*, or *Modern History and Political Economy*, or *Political Economy and Economic History*, will be examined in *History* on the conditions stated above.

The standard of examination for certificates of distinction in each subject is that of the examination in such subject which is required of candidates for the degree of M.A. or M.Sc.

* Except in the case of Logic, the standard in which will be that of the Intermediate examinations.

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2. Teachers' Diploma *

Regulations

1. Candidates before receiving the diploma must have graduated or passed the Final examination for a degree in arts or science in this or some other University of the United Kingdom.

2. Candidates will be required to pass a written examination in the theory, history, and art of education, and will also be examined practically in teaching in one or more subjects of the ordinary curriculum of secondary schools.

3. Before admission to examination candidates will be required to pay a fee of £2, and to present certificates of attendance upon—

(*a*) Prescribed courses in logic, psychology, and ethics, with special reference to education.
In connection with one or other of the above subjects a book, or portion of a book, will be prescribed.†

(*b*) Prescribed courses in general and special method (including school organization, management, and hygiene); in history of educational theories, and systems; and in the educational system of one foreign country.‡ In connection with one or other of these subjects a book, or portion of a book, will be prescribed.§

(*c*) Candidates will also be required to furnish evidence of having taught continuously for a prescribed period in approved practising schools,‖ and of having attended approved courses of criticism lessons.¶

4. Candidates may distribute their attendance over more sessions than one. Those who present certificates of having attended degree courses on logic or psychology and ethics will be exempted from attendance upon the prescribed courses in these subjects.

* Recognized by the Education Department as a qualification for certified teachers (Code, 1898, § 60 (*b*)).

† Recommended for 1901: Aristotle, *Ethics*, i-iii, c. 5, and *Politics*, iv (vii), c. 17, v (viii).

‡ Recommended for 1901: France.

§ Recommended for 1901: Milton's *Tractate*, and the texts contained in Woodward's *Vittorino da Feltre*.

‖ Amount of time prescribed: 150 hours.

¶ Number of criticism lessons prescribed: 25.

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5. Candidates may further offer themselves for a diploma as teachers of special subjects. Such candidates will be examined in the theory of teaching the special subject, as well as practically in class teaching and demonstrations of that subject. In the event of candidates not already holding recognized qualifications of attainments in the said subjects, they will be required to pass an examination in such subjects.

6. Candidates will be required to present certificates of having satisfactorily passed through a course of instruction, approved in each case by the Board, in the method of teaching the special subject in question, and to have given criticism lessons in that subject. This course must include practical demonstrations in the case of a science subject.

7. The course of instruction referred to in § 6 shall be given by the professor or lecturer charged with the subject in a College of the University or an assistant lecturer in that subject authorized by him; and such professor or lecturer or assistant lecturer shall be present at all criticism lessons in the special subject.

8. The number of lessons in the course of instruction and the number of criticism lessons required to satisfy the conditions of § 6 shall, in each case, be approved by the Board. The time so occupied may be reckoned towards the 150 practising lessons required for the general diploma.

N.B.—For courses for the diploma, see pp. 125-129.

3. Diploma in Public Health

Regulations

The examination is held yearly, beginning about the middle of July, under the following regulations :—

1. The examination is in two parts, and is written, oral, and practical.

2. Candidates, before entering for either part of the examination, must have held for not less than twelve months a registrable qualification in medicine, surgery, and midwifery, and must present satisfactory certificates—

i. Of having attended an approved course of instruction in public health in a College of the University, or in

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a college or medical school recognized for this purpose by the University.*

ii. Of having attended, after obtaining a registrable qualification, during at least six months practical instruction in laboratories approved by the University, the courses including chemistry as applied to public health, bacteriology, and the pathology of those diseases of animals which are communicable from animals to man.*

iii. Of having, before or after obtaining a registrable qualification, attended during not less than three months the clinical practice of a hospital for infectious diseases approved by the several licensing bodies recognized under the Medical Act.

iv. Of having practically studied the duties of outdoor sanitary work for not less than six months under the Medical Officer of Health of a county or of a large urban district.†

3. Candidates may present themselves for Parts I and II separately or at the same time, provided that no candidate be admitted to Part II unless he has already passed in Part I. No candidate's name will be published until he has satisfied the Examiners in both parts of the examination.

4. The fee for each part is £5 5s., and must be paid on or before July 1 in each year. For any subsequent examination in the same part the fee will be £3 3s.

Every candidate who has passed both parts of the examination, and who is legally registered, will receive a Diploma in Public Health.

Subjects of Examination

Part I

The subjects of examination are as follows :—

1. *Chemistry as applied to Public Health:* (*a*) Chemistry, with special reference to the examination of air and water; (*b*) methods of qualitative and quantitative analysis.

* May be modified in the case of practitioners qualified before 1890.

† A candidate who has acted as a Medical Officer of Health for a period of not less than six months may be exempted from the operation of this clause.

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2. *Physics as applied to Public Health:* (*a*) Elements of heat, with special reference to warming, ventilation, and meteorology; (*b*) meteorological instruments and their use.
3. *Engineering as applied to Public Health:* (*a*) Water supply; (*b*) drainage, sewerage, and disposal of refuse; (*c*) construction of dwellings, schools, hospitals, including their warming and ventilation; (*d*) geological data referring to the above; (*e*) interpretation of plans.
4. *Microscopy as applied to Public Health:* (*a*) Foods, their adulterations, contaminations, and parasites; (*b*) air and water, their microscopical impurities.
5. *Practical Pathology and Bacteriology:* (*a*) Practical bacteriology, detection and cultivation of vegetable parasites, bacteriological analysis of air and water; (*b*) recognition of parasites and of the lesions which they produce in man; (*c*) recognition of diseased meat.

Part II

The subjects of examination are as follows:—

1. *Ætiology of Disease:* (*a*) Pathology of epidemic and endemic diseases, including diseases of animals communicable to man; (*b*) influence of unwholesome food, air, water, occupation, dwelling, climate, season, soil.
2. *Sanitary Law and Administration:* (*a*) Domestic and general sanitation of houses, villages, and towns; (*b*) regulation of offensive, dangerous, or unhealthy trades and occupations; (*c*) the prevention and control of epidemic disease by isolation, disinfection, vaccination, and other methods; (*d*) statutes and by-laws relating to public health.
3. *Vital Statistics.*
4. *Sanitary Reporting:* The candidate will be required to visit and report upon the sanitary condition of some locality assigned to him by the examiners.

For order of examination, see Vict. Univ. Cal., pp. 180, 181.

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4. Sanitary Inspection Certificates

Regulations

I

1. Candidates will be expected to show a competent knowledge of elementary physics (elementary mechanics, principles of heat, motions and pressures of liquids and gases), and of elementary hygiene; and will receive credit for a knowledge of elementary inorganic chemistry and of the measurement of superficies and cubic space.

Credit will be given for a knowledge of freehand drawing sufficient for the purposes of note-taking. Candidates will be expected to pay attention to handwriting and composition.

2. *Sanitary Law.*—Acts of Parliament and model by-laws relating to the duties of inspectors of nuisances.

*Supplementary questions will be set for candidates contemplating employment as inspectors of nuisances in London or Scotland.

3. *Sanitary Engineering and Appliances.*—(*a*) Disposition and arrangement of dwellings; house construction; warming, lightin, and ventilation; plumber's work; (*b*) drainage and disposal of refuse; (*c*) water supply.

*Candidates will be expected to be able to interpret plans and sections, to prepare specifications, and to understand the setting-out and supervision of works.

4. *Objects and Methods of Inspection of Nuisances.*—Inspection of dwellings, including lodging houses, cellar dwellings, canal boats, and moveable dwellings; of workshops; of dairies, cow-sheds and milk-shops; of markets and slaughter-houses; of offensive trades and manufactures; of the pollutions of the atmosphere and streams.

5. *Food Inspection.*—A knowledge of the appearances of wholesome food; method of procedure under the Sale of Food and Drugs Acts.

6. *Methods of Disinfection.*—Disinfection of dwellings and clothing. Credit will be given for a knowledge of the various disinfectors in common use, and of their comparative value, as well as for a knowledge of the incubation periods of the more common infectious diseases.

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7. Candidates will in addition be permitted to offer themselves for special examinations in subjects in connection with which they desire to obtain appointments (such as the inspection of meat, fish, and smoke; disinfection; the investigation of outbreaks of fevers, &c.); and if they are successful their certificates will be endorsed accordingly.

II

The examination will be conducted partly by papers and partly *vivâ voce*, and the candidates will in addition be required to report upon the condition of a house or some other subject selected for the purpose.

*It will, ordinarily, occupy one day; the *vivâ voce* and paper examinations being held simultaneously, and the examination, with the exception of the preliminary paper, being usually *vivâ voce*. The fee† for the ordinary examination will be £2 2s.; an additional fee of 10s. 6d. will be charged for each special examination. No fee will be charged for the certificate

Subjects of Examination

First Examination: Elementary physics, elementary hygiene; elementary inorganic chemistry; mensuration.

Candidates for the examination will not be required to present certificates of attendance.

In lieu of passing this examination candidates may furnish to the Board of Studies such evidence as it may consider satisfactory of an elementary knowledge of these subjects.

Second Examination (a written paper of 3 hours): Sanitary law; sanitary engineering and appliances; objects and methods of inspection of nuisances; food inspection; methods of disinfection; *vivâ voce* examination and report on sanitary condition of a house, &c.

Candidates presenting themselves for examination in a special subject are required to give notice to the Registrar one month beforehand. They will be examined partly by paper and partly *vivâ voce*, and will be required to make a report on selected subjects.

* This does not apply to the special additional examinations.

† Names of candidates should be sent in to the Registrar and the fees paid not later than July 1.

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Attendance

First Year. (Optional). A course or courses of elementary instruction in physics, hygiene, inorganic chemistry and mensuration.

Second Year. In a College of the University—or in an Institution recognized by the University, for the purpose :

1. A course of twenty lectures on sanitary engineering and appliances, with sanitary law.
2. A course of twenty lectures on the objects and methods of inspection of nuisances; food inspection; and methods of disinfection.

No special certificate of attendance will be required from candidates presenting themselves for examination in a special subject.

SCHEME OF UNIVERSITY CERTIFICATES

Candidates presenting themselves for examination are required, unless otherwise provided, to furnish certificates of having been in regular attendance for a prescribed period on the class or classes which have been recognized by the University for the purpose, and to pay a fee of 2s. 6d. The following are the combinations of subjects for proficiency in which certificates will be awarded :—

1. Principles of Agriculture

Subjects of Examination

1. Chemistry.
2. Botany.
3. Agriculture.

Attendance

One class during a period of not less than six months, in each of two sessions, supplemented by a course of not less than twenty days of lectures and practical work in a laboratory recognized by the University.

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2. Principles of Coal Mining

Subjects of Examination

1. Chemistry.
2. Physics.
3. Geology.
4. Coal Mining.

Attendance

One class during a period of not less than six months, in each of two sessions, supplemented by a course of not less than twenty days of lectures and practical work in a laboratory recognized by the University

Advanced students may, on satisfying the Board of Studies of their fitness, be admitted to examination after one session's attendance.

3. Commercial Knowledge

For classes in connection with approved colleges, schools, and institutes.

Subjects of Examination

A. *One* of the following : (*a*) French ; (*b*) German ; (*c*) Spanish ; (*d*) Italian. The examination in each language will include dictation and conversation ; grammar ; translation at sight and composition, including the conduct of commercial correspondence.

B. *One* of the following : (*a*) Political economy, including the principles, *either* of finance, *or* foreign exchange, *or* banking ; (*b*) commercial geography and statistics ; (*c*) commercial and industrial history ; (*d*) advanced book-keeping.

Candidates may offer themselves for examination in more than one of the above subjects and also in shorthand, in which a rate of 80 to 100 words a minute will be demanded.

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No candidate will receive a certificate unless he has satisfied the examiners in one subject at least taken from A and in one subject taken from B ; but additional subjects may be presented at the same or subsequent examinations.

The subjects in which the candidate has satisfied the examiners will be in all cases indicated upon the certificate

Attendance

1. Before admission to examination, a candidate must present satisfactory certificates of attendance on classes recognized by the University for the purpose during one session at least, in each of the subjects in which he presents himself for examination.

2. The certificates of attendance must in all cases be signed by the Secretary or authorised representative of the Institution in which the classes in question have been held.

3. Attendance for one session shall mean attendance during a period of not less than six months.

4. A yearly examination will be held in all subjects for which candidates present themselves. The fee for each examination is 2s. 6d., entitling the candidate to take any subject or subjects for which he is duly qualified to enter

5. Every candidate is required to give notice* to the Registrar of the University of his intention to present himself for examination and of the subjects he proposes to take, not later than March 1.

6. No additional fee will be charged for the certificate.

* This notice may be given directly or through the Secretary of the Institution in which the candidate has attended classes.

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EXAMINATIONS IN 1901

	Date of Examination.	Last day for payment of fees.
Preliminary Examination ...	June 13	May 14 *
	Sept. 16	Sept. 7
Preliminary (for Schools)	July 11	May 10 †
Intermediate B.A., B.Sc. and LL.B.....	June 10	May 14 *
(Supplementary)...	Sept. 16	Sept. 7
Final B.A., B.Sc., and LL.B....	June 10	May 14 *
(Supplementary).....	Dec. 12 ‡	Oct. 25 ‡
Honours Schools	June 10	May 14 *
M.A. and M.Sc. Examinations	June 10	March 31
Litt.D., D.Sc., and LL.D	Candidates should make application to the Registrar in the month of January.	
First M.B.....	June 10	May 14 *
	Sept. 20	Sept. 7
Second and Final M.B.	March 13	March 1
	July 12	July 1
Ch.M.	July 12	June 1
M.D.	Dissertations to be sent in by February 1.	
Certificates for Women	June 10	May 14 *
Certificates of Distinction	June 10	March 31
Diploma in Public Health	July 15	July 1
Teacher's Diploma	July 15	July 1
Sanitary Inspection Certificate	July 15	July 1

If, owing to special circumstances, no fee is due for an examination, or part of an examination, notice, in writing, must be sent to the University Registrar on or before the date named for the payment of the fee.

The attention of candidates is particularly invited to the above table, as the rules as to dates for payment of Fees *will be strictly enforced.*

* Late fees may be received by the University Registrar up to May 25 on payment of an extra fee of £1.

† May 10 is the last day for notice for forms or classes of schools. Individual members of such forms or classes may enter for the Preliminary up to July 1.

‡ B.Sc. candidates who have to pass in a subject of the Intermediate Standard must pay the fee on or before September 7, and will be examined in that subject in September.

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UNIVERSITY FEES FOR EXAMINATIONS AND DEGREES

1. The fees for examinations are as follows :—
   i. For the Preliminary examination, £2 ; and for each subsequent examination, £1.
      For the Preliminary examination when taken by forms or classes of schools for school purposes only, see Vict. Univ. Cal., p. 101.
   ii. For the Intermediate examination (Faculties of Arts, Science, and Law), £1 ; and for each subsequent examination, £1.
      For the First examination for the degrees of M.B. and Ch.B., £5 ; and for each subsequent examination, £2.
   iii. For the Second examination for the degrees of M.B. and Ch.B., £5 ; and for each subsequent examination, £2.
   iv. For the Final examination for the ordinary degree of B.A., or B.Sc., or LL.B., £1 ; and for each subsequent examination, £1.
      For the Final examination for the degree of B.A., or B.Sc., with Honours, £2.
      For the Final examination for the degrees of M.B. and Ch.B., £5 ; and for each subsequent examination, £2.
   v. For the examination for the degree of M.A. or M.Sc., £1.
   vi. For the examination for the degree of Ch.M., £5.

2. No fee will entitle to admittance to more than *one* examination.

3. The fees for conferring degrees are as follows :—
   i. On conferring the degree of B.A., or B.Sc., or LL.B., £5.
   ii. On conferring the degree of M.A., or M.Sc., £5.
   iii. On conferring the degree of Ch.M., £5.
   iv. On conferring the degree of Doctor, £10.

University correspondence should be addressed to *The Registrar, Victoria University, Manchester.*

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UNIVERSITY FELLOWSHIPS, SCHOLARSHIPS AND PRIZES

(N.B.—For full particulars of University Fellowships, Scholarships, and Prizes, see Victoria University Calendar, pp. 161-177*).*

University Fellowships.—Four of £100, tenable for one year. Awarded annually, one for excellence and promise in the subjects of one of the Honours Schools of the Faculties of Arts or in the Faculty of Law; another in one of the Honours Schools of the Faculty of Science; another for excellence and promise in one or more of the subjects of the Second or Final M.B. examination; and the fourth in any of the Faculties.

John Bright Fellowship.—One of £100. Awarded biennially for the encouragement of English Literature. Candidates must not be of more than five years' standing from the date of their B.A. degree.

University Scholarships.—Several of £25, tenable for one year. Awarded annually for proficiency in subjects included in the Faculties of Arts, Science, and Medicine. The Arts and Science Scholarships are awarded upon the results of the Final examination for Honours; the Scholarships in medicine on the results of the Second examination for the degrees of M.B. and Ch.B.

Derby Scholarships.—Two of about £40, tenable for two years. One awarded annually on the results of the Final B.Sc. examination in the Honours School of Mathematics.

Mercer Scholarship.—One of about £30, and tenable for one year. Awarded annually on the results of the Final B.Sc. examination in the Honours School of Chemistry.

Gilchrist Scholarship.—One of £50 per annum, tenable for three years. Awarded annually on the results of the June Preliminary examination to the candidate who stands highest in the first division, provided that his age does not exceed *eighteen* years on the first day of July in the year of competition.

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Gilchrist Travelling Studentship.—One of £70, tenable for one year. Awarded annually to candidates who propose to engage in teaching in secondary schools. Competition limited to graduates of the Victoria University of not more than four years' standing from the date of the first degree.

William Summers Scholarship.—One of about £35 per annum, tenable for three years. Awarded on the results of the June Preliminary examination in languages, English history, and mathematics. The scholar must study in one of the Honours Schools in the Faculty of Arts. Candidates must have resided in the Parliamentary Borough of Huddersfield, or attended a public school therein during one full year previous to the 1st of June in the year of competition.

University Entrance Scholarships.—Three of £30 per annum, tenable for three years. Awarded annually to the duly qualified competitors who stand highest at the Preliminary examination held for the purpose of examining forms or classes in schools, provided that they pass in the first division.

M.D. Dissertation Gold Medal.—Awarded annually for a dissertation distinguished by marked originality and special excellence.

Leblanc Prize.—Bronze medal awarded annually to the candidate in the Final B.Sc. examination in Honours School of Chemistry who is recommended for distinction in technological chemistry or metallurgy.

Cobden Prize.—A prize, now of the value of £20, together with a silver medal, is awarded triennially for an essay on some subject connected with political economy.

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LONDON UNIVERSITY

Outline of Regulations

The University imposes no condition of residence or attendance at lectures.

University College Liverpool is one of the centres at which the following London University examinations are held :—

Matriculation (June).
Intermediate in Arts (July).
Intermediate in Science (July).
Preliminary Scientific (July).
Final B.A. (October).

Matriculation

Candidates for any degree must have passed the Matriculation examination. There are two examinations for matriculation in each year, one commencing on the second Monday in January, and the other on the second Monday in June. Candidates must have completed their sixteenth year. The subjects of examination are—(1) *Latin*; (2) *English*; (3) *Mathematics*; (4) *General Elementary Science*; (5) any one of the following languages or sciences :—*Greek*; *French*; *German*; *Sanskrit*; *Arabic*; *Elementary Mechanics*; *Elementary Chemistry*; *Elementary Sound*, *Heat*, and *Light*; *Elementary Magnetism* and *Electricity*; *Elementary Botany*.

In the classical languages, and in Sanskrit, set books are prescribed, changing every year.

After successful matriculation students may proceed to a degree in Arts, Science, Law, or Medicine.

For each of these two examinations are required, and it is possible to proceed further in Arts to the M.A. and D.Litt. degree ; in Science to the D.Sc. degree ; in Law to the LL.D. degree.

At or after each of the examinations candidates may offer themselves for Honours in the various subjects of the examination. At these Honours examinations, scholarships are awarded to the most distinguished.

As a rule, a year must elapse between each examination before the student proceeds to a higher stage.

Intermediate in Arts and Intermediate in Science

These examinations commence on the second Monday in July.

The subjects in Arts are—(1) *Latin* and *Roman History*; (2) *Greek* and *Greek History*; (3) *English Language*, *Literature*, and *History*; (4) *French* or *German*; (5) *Mathematics* or *Logic*.

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Honours may be taken in Latin, Greek, English, History, French, German, Mathematics, Logic.

For the Intermediate in Science, candidates are examined in any *four* subjects selected by themselves out of the following six subjects of examination :—(1) *Pure Mathematics*; (2) *Mechanics*; (3) *Experimental Physics*; (4) *Chemistry*; (5) *Botany*; (6) *Zoology*.

Honours may be taken in Pure Mathematics and Mechanics, Experimental Physics, Chemistry, Botany, Zoology.

B.A. and B.Sc. Examinations

These examinations commence on the fourth Monday in October.

The B.A. subjects are—(1) *Latin*, including *Roman History*; (2) *Greek*, including *Greek History*; (3) *English*; (4) *One* of the following languages :—*French*, *German*, *Italian*, *Arabic*, *Sanskrit*; (5) *History*; (6) *Pure* or *Mixed Mathematics*; (7) *Mental* and *Moral Science*; (8) *Political Economy*.

Candidates are examined in branches (1) and (2), and in any other two they may select out of the remaining branches. Honours may be taken in Mathematics, Classics, English, French, German, Italian, History, Mental and Moral Science, Political Economy.

The B.Sc. subjects are eight in number, from which three must be chosen :—(1) *Pure Mathematics*; (2) *Mixed Mathematics*; (3) *Experimental Physics*; (4) *Chemistry*; (5) *Botany*; (6) *Zoology*; (7) *Animal Physiology*; (8) *Geology* and *Physical Geography*.

Honours may be taken in any of the above subjects.

M.A., D.Lit., and D.Sc. Examinations

The M.A. degree can be taken in—(1) *Classics*; (2) *Mathematics* and *Natural Philosophy*; (3) *English*; (4) any *two* of the following languages :—*French*, *German*, *Italian*, *Celtic*, *Hebrew*, *Sanskrit*, *Arabic*; (5) *History*; (6) *Mental* and *Moral Science*; (7) *Political Economy*.

Candidates for D.Lit. degree are required to have passed the M.A. examination in one of the following :—(1) *Classics*; (2) *English*; (3) any *two* of the following languages :—*French*, *German*, *Italian*, *Celtic*, *Hebrew*, *Sanskrit*, *Arabic*; (4) *History*; (5) *Mental and Moral Science*; (6) *Political Economy*. An original dissertation or thesis is required.

For the D.Sc. degree an original dissertation or thesis is required; candidates can select their own subjects of examination from among those included in the B.Sc. programme.

Intermediate Examination in Laws

The examinations in 1901 will commence on the first Monday in January, and the third Monday in October. The subjects are—(1) *Jurisprudence*; (2) *Roman Law*; (3) *Constitutional History of England*. Honours may be taken in Jurisprudence and Roman Law.

LL.B. Examination

The examination commences on the first Monday in January. The subjects are—(1) *Common Law*; (2) *Equity*; (3) *Law of Real and Personal Property*; (4) *Roman Law*. Honours may be taken in Common Law and Equity.

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LL.D. Examination

The examination takes place in January, commencing on Tuesday in the second week after the LL.B. examination. The subjects are—(1) *Roman Law*; (2) *Common Law* or *Real Property Law* or *Equity*; (3) *International Law* or *Jurisprudence* and *Principles of Legislation*.

Scholarships and Exhibitions

Matriculation.—Exhibitions of £30, £20, £15, tenable for two years, for the first three candidates in Honours division. Limit of age, twenty.

Intermediate in Arts.—Three exhibitions of £40, and three of £30, tenable for two years, for the first in Honours in *Latin*, *Greek*, *Mathematics*, *English*, *History*, *Logic*. Limit of age, twenty-two.

B.A.—Scholarships of £50, tenable for three years, for the first in Honours in *Mathematics*, *Mental* and *Moral Science*, *Classics*, *English*. Limit of age, twenty-three.

Intermediate in Science.—Exhibitions of £40, tenable for two years, for the first in Honours in *Mathematics*, *Experimental Physics*, *Chemistry*, *Botany*, *Zoology*. Limit of age, twenty-two.

B.Sc.—A scholarship of £50, tenable for three years, for the first in Honours in *Mathematics*, and scholarships of £50, tenable for two years, for the first in Honours in *Experimental Physics*, *Chemistry*, *Botany*, *Zoology*, *Physiology*, *Physical Geography*, and *Geology*. Limit of age, twenty-three.

Intermediate in Laws.—An exhibition of £40, tenable for two years, for the first in Honours in *Jurisprudence* and *Roman Law*.

LL.B.—A scholarship of £50, tenable for two years, for the first in Honours in *Common Law* and *Equity*.

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UNIVERSITY TRAINING COLLEGE LIVERPOOL

Conditions of Admission.

NOTE.—*Enquiries and applications for admission must be addressed 'The Principal of the Training College,' University College, Liverpool.*

1. Admission to the Training College is awarded upon (*a*) the result of an examination held by the Education Department, and known as the examination for Queen's scholarships; (the next examination will be held in December, 1900, for admission in October, 1901; no one may sit for the examination in December, 1900, who has not completed his seventeenth year on September 1st preceding); (*b*) the results of the Victoria University Preliminary examination (division I) and of the examinations noted in the Code of the Education Department (1899), p. 87. Art. 115*d*, sched. viii.

2. The Committee of the University Training College desire that it be understood that admission to their College is in no way limited to those who, as pupil teachers or otherwise, have had experience of elementary teaching. In addition to applications from pupil teachers, those of candidates offering themselves directly from secondary schools or University Colleges will receive most favourable consideration.

3. Applicants are required to furnish certificates of sound health and good conduct, and to make application upon forms supplied by the Principal.

4. Pupil teachers will usually be examined at centres of which the managers of their schools will be informed by the Department. But any candidate may, if he prefer, be examined in Liverpool.

Accommodation during the scholarship examination will be provided for such candidates from a distance as may be examined in Liverpool; the charge for board and lodging during the examination is ten shillings.

5. In selecting students, the Committee will give preference (1) to those who have obtained a high place in the scholarship list, or pass the Victoria University Preliminary

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in division I, or (2) to those who offer the certificate of a recognized public examination (*e.g.*, the Preliminary examination of Victoria University, the Senior Local examination of Oxford or Cambridge) in addition to a place in the first or second class of the Queen's scholarship examination.

Graduates may also apply for admission under terms of Art 115*b*.

6. Thirty Queen's scholars may be chosen each year for admission to the Training College upon the issue of the scholarship list; notice will be given by the Principal to these Queen's scholars of the date at which they must register their names as students of the Training College and sign the declarations required by the College Committee and the Government (see Art. 117*b*). Students come into residence in October.

7. Of the students admitted, some may, with the permission of the Committee, reside in their own homes, if situate within convenient distance from the College; the rest will reside in the Hostel.

8. The Hostel is a residential hall in which the greater portion of the students reside. In all that pertains to discipline, they are under the authority of the Warden, who affords individual direction and assistance to the students in the work of preparation. All the students, as members of Victoria University, share in the wider interests and social fellowship of a university life.

In the case of students who reside in the Hostel, the Government grant of £25 per annum for maintenance (Art. 127*a*) will be retained by the Committee in return for the cost of board, lodging, etc. To other students the grant will be paid at the times and in the instalments mentioned in the Code.

9. All students of the Training College are required to pay an annual charge of £10.

(*a*) Applicants for admission must pay half of their first year's charge upon application; this sum of £5 will be returned to applicants who fail to gain admission. Students admitted will pay the other half of the first year's charge on registration in October.

(*b*) Students of the second and third years will pay the annual charge of £10 before coming into residence in September.

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(*c*) In addition to these charges, students are required to pay the University examination fees, viz., Preliminary, £2; Intermediate, £1; Final, £1; or the joint College fee, £1, and to provide their own books.

Thus, the *necessary* charges of a student do not exceed £12 annually.

10. The students of this College attend lectures and classes at University College, and read for the degrees of Victoria University; the examinations for these degrees are accepted, at each stage, by the Education Department as equivalent to the several examinations in part II for the certificate. Students reading for the degree of B.Sc. perform their practical work in the College laboratories.

11. Full provision is made for instruction in all subjects of part I of the department's syllabus. The Principal, as Professor of education at University College, and the Professor of philosophy, deliver courses of lectures on the various branches of the theory and art of teaching. Practising work, criticism lessons, and visits of observation are conducted under the direction of the Principal.

In the case of students who have had no experience in teaching, special provision will be made for extended practice in schools under supervision, and ample opportunity afforded for observation of various types of elementary school work and organization.

12. Religious instruction of an undenominational character will be provided, and also facilities for denominational teaching. No student will be placed under any religious disability.

Students residing in the Hostel are required to conform to the regulations of the Hostel respecting attendance at public worship.

13. A course of instruction in drill forms part of the College curriculum.

Attention is called to the tenure of the Lundie scholarship, p. 21.

The detailed syllabus of subjects required for the Queen's scholarship examination can be obtained from the Education Department, or from the Principal of the Training College.

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Further details of the work of the Training College may be gathered from the following statement :—

The yearly examinations for the Government certificate are divided into two parts, of which part I includes the professional, and part II the liberal subjects.

Students who pass University examinations in which certain obligatory subjects are included, are exempted year by year from further examination in part II. The course of study at University College of students of the Training College is so arranged that they will, upon passing the Preliminary, Intermediate, and Final examinations for the B.A. or B.Sc. degree of Victoria University, satisfy the Government requirements in each of the three years of part II. Students who pass the first two of these examinations satisfy the Government requirement in part II for the certificate.

The University Training College year coincides nearly with the session of University College. The session commences at the beginning of Ocober, is divided into three terms of about eleven weeks, and finishes at the end of June. Training College students are engaged in their practical training during certain portions of the University vacations.

It is of the greatest importance that candidates should have obtained the certificate of the Science and Art Department in freehand and model drawing in the May preceding their admission to College.

UNIVERSITY HALL FOR WOMEN STUDENTS

163 Edge Lane, Liverpool.

Fees, £35 to £55 for the session of three Terms.

Committee

Hon. President.—The Countess of Derby.
Hon. Vice-President.—Principal Dale.
Chairman.—Miss E. G. Holt, Sudley, Mossley Hill.
Hon. Treasurer.—H. Ehrenborg, Esq., 22 Canning Place.
Hon. Secretary.—Mrs. F. M. Simpson, 20 Falkner Street.
Warden.— *Vacant.*

All particulars can be obtained on application to the Warden, 163 Edge Lane, Liverpool.

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GENERAL TIME TABLE

ARTS, SCIENCE, AND LAW

Classes*	Day and Hour						Fee								
	M.	Tu.	W.	Th.	F.	S.	One Term			Two Terms			Course		
Greek							£	s.	d.	£	s.	d.	£	s.	d.
Translation, Preliminary ..	9.30	..	9.30	..	9.30	..	2	0	0	3	0	0	4	0	0
„ Intermediate ..	10.30	..	10.30	..	..	..	1	7	6	2	2	0	3	0	0
„ Final	12.30	..	12.30	..	..	..	1	7	6	2	2	0	3	0	0
„ Honours A ..	..	11.30	..	11.30	..	..	1	7	6	2	2	0	3	0	0
„ „ B ..	11.30	..	..	..	..	..	1	0	0	1	10	0	2	0	0
Composition, Preliminary ..	..	..	..	9.30	..	..	1	0	0	1	10	0	2	0	0
„ Intermediate..	..	9.30	..	..	..	..	1	0	0	1	10	0	2	0	0
„ Final	..	..	..	..	10.30	..	1	0	0	1	10	0	2	0	0
„ Honours ..	..	..	(*by arrangement*)		..	..	1	0	0	1	10	0	2	0	0
Latin															
Translation, Preliminary ..	10.30	..	10.30	..	10.30	..	2	0	0	3	0	0	4	0	0
„ Intermediate ..	12.30	..	12.30	..	..	..	1	7	6	2	2	0	3	0	0
„ Final	9.30	..	9.30	..	9.30	..	2	0	0	3	0	0	4	0	0
„ Honours and M.A.	..	9.30	..	9.30	..	..	1	7	6	2	2	0	3	0	0
Composition, Preliminary ..	..	10.30	..	..	..	..	1	0	0	1	10	0	2	0	0
„ Intermediate ..	..	..	..	10.30	..	..	1	0	0	1	10	0	2	0	0
„ Final	..	..	..	..	12.30	..	1	0	0	1	10	0	2	0	0
„ Honours and M.A.	..	..	(*by arrangement*)		..	..	1	0	0	1	10	0	2	0	0
French															
Preliminary	12.30	..	12.30	..	12.30	..	2	0	0	3	0	0	4	0	0
Intermediate	2.0	..	2.0	..	2.0	..	2	0	0	3	0	0	4	0	0
Final	3.0	..	3.0	..	3.0	..	2	0	0	3	0	0	4	0	0
Literature	..	..	3.0	..	..	..	1	0	0	1	10	0	2	0	0
Honours and M.A.	10.30	..	10.30	..	10.30	..	2	0	0	3	0	0	4	0	0
Romance Philology.. ..	..	..	(*by arrangement*)		..	..	1	0	0	1	10	0	2	0	0
German															
Preliminary	4.0	..	4.0	..	4.0	..	2	0	0	3	0	0	4	0	0
Intermediate	3.0	..	3.0	..	3.0	..	2	0	0	3	0	0	4	0	0
Final	2.0	..	2.0	..	2.0	..	2	0	0	3	0	0	4	0	0
Literature	..	..	2.0	..	..	..	1	0	0	1	10	0	2	0	0
Honours and M.A.	..	2.0	..	11.30	..	..	1	7	6	2	2	0	3	0	0
Special Class (*A.L.*) † ..	..	3.0	..	..	..	..	1	0	0	..			1	10	0

* Unless otherwise stated, the classes are continuous throughout the year.
† The letters *A*, *L*, *S* in brackets indicate Autumn, Lent, and Summer Terms.

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Classes*	Day and Hour						Fee		
	M.	Tu.	W.	Th.	F.	S.	One Term	Two Terms	Course
Italian									
Preliminary	9.30	..	..	..	9.30	..	£ s. d. 2 0 0	£ s. d. 3 0 0	£ s. d. 4 0 0
Intermediate	2.0	..	..	..	2.0	..	2 0 0	3 0 0	4 0 0
Final	..	2.0	..	2.0	..	..	2 0 0	3 0 0	4 0 0
Special Class..	..	..	(*by arrangement*)			..	..	..	2 10 0
M.A. and Cert. of Dist. ..	..	..	„			..	2 0 0	3 0 0	4 0 0
English									
Preliminary	..	..	..	2.0	..	..	1 0 0	1 10 0	2 0 0
Intermediate	..	3.0	..	12.30	..	..	1 7 6	2 2 0	3 0 0
Final and M.A. (Early Eng.)	..	10.30	..	10.30	..	..	1 7 6	2 2 0	3 0 0
„ „ (Gothic) ..	12.30	..	..	..	..	..	1 0 0	1 10 0	2 0 0
Honours	10.30	..	10.30	..	..	..	1 7 6	2 2 0	3 0 0
Phonetics									
General Phonetics	..	4.0	..	..	..	..	1 0 0	1 10 0	2 0 0
Icelandic									
Honours Eng. Lang. ..	..	11.30	..	..	..	..	1 0 0	1 10 0	2 0 0
Modern Literature									
Preliminary (*A.L.*)	..	2.0	..	..	..	..	1 0 0	1 10 0	2 0 0
Intermediate and Final ..	11.30	..	11.30	..	11.30	..	2 0 0	3 0 0	4 0 0
Honours and M.A.	12.30	..	..	..	12.30	..	1 7 6	2 2 0	3 0 0
Special Class (*A.L.*).. ..	..	..	3.0	..	..	..	1 0 0	..	1 10 0
History									
Preliminary	2.0	..	..	..	2.0	..	1 7 6	2 2 0	3 0 0
Intermediate (Ancient) ..	..	12.30	..	12.30	..	..	1 7 6	2 2 0	3 0 0
„ (Modern) ..	..	..	10.30	..	10.30	..	1 7 6	2 2 0	3 0 0
Final (Greek)	10.30	..	..	4.0	..	..	1 7 6	2 2 0	3 0 0
„ (Roman)	..	10.30	..	10.30	..	..	1 7 6	2 2 0	3 0 0
„ (Modern)	..	9.30	..	9.30	..	..	1 7 6	2 2 0	3 0 0
Honours and M.A. (Ancient)	..	..	(*by arrangement*)			..	..	..	..
„ (Modern)	..	..	12.30	..	..	..	1 0 0	1 10 0	2 0 0
„ „	..	..	2.0	..	..	..	1 0 0	1 10 0	2 0 0
Palæography..	..	..	(*by arrangement*)			..	..	..	..
Philosophy									
Logic..	9.15	..	9.15	..	..	..	1 7 6	2 2 0	3 0 0
Psychology	..	11.30	..	11.30	..	..	1 7 6	2 2 0	3 0 0
„ Advanced. ..	..	(*at hours to be arranged*)				..	1 7 6	2 2 0	3 0 0
Ethics	..	10.30	..	..	..	..	1 0 0	1 10 0	2 0 0
Hist. of Anc. Phil.	..	..	10.30	..	10.30	..	1 7 6	2 2 0	3 0 0
Aristotle's Ethics	..	3.0	..	..	..	..	1 0 0	1 10 0	2 0 0

* Unless otherwise stated, the classes are continuous throughout the year.

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Classes*	Day and Hour						Fee		
	M.	Tu.	W.	Th.	F.	S.	One Term	Two Terms	Course
Education							£ s. d.	£ s. d.	£ s. d.
Education, Course A (*A.S.*)	..	..	..	..	..	12.0	0 6 0	0 11 0	0 16 0
" " B	..	..	..	..	..	11.0	0 6 0	0 11 0	0 16 0
" " C	..	..	..	..	..	9.15	0 6 0	0 11 0	0 16 0
Teacher's Diploma	..	..	(*by arrangement*)		..	..	..	..	10 0 0
Evidence & Inference (*A.*)	..	..	..	..	..	10.0	0 6 0	..	..
Formation of Character (*L.S.*)	..	..	..	..	..	10.0	0 6 0	0 11 0	..
Psychology	..	..	..	..	..	12.0	0 6 0	0 11 0	0 16 0
Special Class (Aristotle)	..	..	(*by arrangement*)		..	..	0 6 0	0 11 0	0 16 0
Economic and Commercial Science									
Polit. Economy, Course A	..	4.30	..	12.30	..	..	1 7 6	2 2 0	3 0 0
" " " B	..	..	..	2.0	..	..	1 0 0	1 10 0	2 0 0
Advanced Economics	..	..	(*by arrangement*)		..	..	..	..	..
Econ. and Com. History	..	2.0	..	..	..	..	1 0 0	1 10 0	2 0 0
Commercial Geography	..	10.30	..	..	..	..	1 0 0	1 10 0	2 0 0
Political & Commercial Geography (*Outlines*)	..	..	..	10.30	..	..	1 0 0	1 10 0	2 0 0
Physical Geography	..	..	..	..	..	11.0	1 0 0	1 10 0	2 0 0
Mathematics									
Pure									
Preliminary	.. ..	11.30	..	11.30	..	11.30	..	2 0 0	3 0 0	4 0 0
Intermediate	.. ..	9.30	..	9.30	..	9.30	..	2 0 0	3 0 0	4 0 0
Final and Honours I	..	10.30	..	10.30	..	10.30	..	2 0 0	3 0 0	4 0 0
" " II	..	..	10.30	..	10.30	..	10.0	2 0 0	3 0 0	4 0 0
Honours III	.. ..	..	..	(*by arrangement*)		..	..	2 0 0	3 0 0	4 0 0
Applied									
Intermediate and Honours I	..	9.30	..	9.30	..	9.0	2 0 0	3 0 0	4 0 0
Final and Honours II	..	11.30	..	11.30	..	11.0	2 0 0	3 0 0	4 0 0
Honours III	.. ..	..	..	(*by arrangement*)		..	2 0 0	3 0 0	4 0 0
Physics									
Elementary Mechanics	..	11.30	..	11.30	..	10.0	2 0 0	3 0 0	4 0 0
Junior Physics (Lecture and Class)	4.0	12.30	..	12.30	..	..	3 0 0	4 15 0	6 0 0
Junior, Practical Class	9.30	..	..	..	9.30	..			
Intermediate Physics	..	4.0	12.30	4.0	..	..	2 0 0	3 0 0	4 0 0
Senior "	12.30	..	9.30	..	12.30	..	2 0 0	3 0 0	4 0 0
Advanced "	..	..	11.30	..	..	..	1 0 0	1 10 0	2 0 0
Laboratory	9½-1½ 2-5	9½-1½ 2-5	9½-1½ 2-5	9½-1½ 2-5	9½-1½ 2-5	..	*For Laboratory Fees, see p. 143.*		
Special Lab. Course (Civil and Mech. Eng., 2nd year)	10.30-12.30	..	..	..	3-5	..	..	..	..
Special Lab. Course (Elec. Eng., 1st year), (*L. S.*)	..	9.30-11.30	..	..	..	..	*Included in Elect. Eng. Comp. Fee.*		

* Unless otherwise stated, the classes are continuous throughout the year.

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Classes*	Day and Hour						Fee		
	M.	Tu.	W.	Th.	F.	S.	One Term	Two Terms	Course
Electro-technology									
Junior	2.0	..	..	..	2.0	..	£ s. d.	£ s. d.	£ s. d.
Problem Class	..	..	..	2.0	..	..	2 0 0	3 0 0	4 0 0
Intermediate	9.30	..	..	9.30	..	..			
Problem Class	..	..	..	..	..	..	2 0 0	3 0 0	4 0 0
Senior	..	9.30	..	..	9.30	..			
Problem Class	..	2.0	..	..	..	..	2 0 0	3 0 0	4 0 0
Telegraphy and Telephony (*A*) ..	..	(*at hours to be arranged*)					..	..	1 10 0
Laboratory	10-5	10-5	10-5	10-5	10-5	..	*For Laboratory and Composition Fees, see p. 150.*		
Engineering									
Engineering									
Year I	10.30	..	..	..	10.30	9.0	2 0 0	3 0 0	4 0 0
Problem Class (*A. L.*) ..	..	..	10.30	..	..	..	..	..	1 0 0
Year II	..	10.30	..	10.30	..	10.0	2 0 0	3 0 0	4 0 0
Problem Class	..	11.30	..	..	..	..	..	..	1 0 0
Year III	11.30	..	11.30	..	11.30	..	2 0 0	3 0 0	4 0 0
Problem Class	..	..	9.30	..	..	..	..	..	1 0 0
Drawing and Design									
Year I (*A. L.*)	2-3	..	..	3-5	..	..			
„ (*S.*)	..	..	..	2-5	..	..	2 0 0	3 0 0	4 0 0
Year II (*A. L.*) ..	12.30	..	..	..	..	..			
	3-5	..	..	..	..	..	2 0 0	3 0 0	4 0 0
„ (*S.*)	3-5	..	..	..	..	..			
Year III	..	..	..	..	2-5	..	2 0 0	3 0 0	4 0 0
Descriptive Geometry									
Elementary (*A. L.*) ..	..	2-4	..	2.0	..	..	2 0 0	..	3 0 0
Advanced (*A. L.*) ..	..	2-4	..	..	12.30	..	2 0 0	..	3 0 0
Higher (*A. L.*)	..	..	..	..	9.30	..	1 0 0	..	1 10 0
Graphic Statics (*S.*) ..	..	2-4	..	..	..	..	..	..	1 0 0
Surveying, El. (*S.*)	12.30	2-5	..	..	..	..	..	..	3 0 0
„ Adv. (*S.*) ..	2-5	..	..	..	9.30	..	..	..	3 0 0
Diseases of Timber	..	..	..	..	10.0	..	..	..	0 15 0
Laboratory	10-1	10.1	10-1	10-1	10-1	10-1	*For Laboratory and Composition Fees, see pp. 171, 172*		
	2-5	2-5	2-5	2-5	2-5	..			
Chemistry									
Elementary	3.0	3.0	..	3.0	3.0	..	2 0 0	3 0 0	4 0 0
Special Elementary (*A. L.*) ..	..	..	9.30	..	9.30	..	1 10 0	..	2 10 0
Course A (Non-Metals) ..	..	11.30	..	11.30	..	..	1 10 0	2 10 0	3 0 0
„ B (Metals)	..	9.30	..	9.30	..	..	1 10 0	2 10 0	3 0 0
„ C (Organic)	9.30	..	..	..	9.30	..	1 10 0	2 10 0	3 0 0
„ H (Organic)	..	..	2.0	..	2.0	..	..	..	2 0 0
„ D (Phys. Chemistry)	..	.. (*at hours to be arranged*)				..	1 0 0	..	2 0 0
„ E (Hist. Chemistry)	..	..	9.30	..	..	..	1 0 0	1 10 0	2 0 0
„ F 1 (Fuel & Illuminating Gas)	..	..	11.30	..	..	..	..	..	1 10 0
„ F 2 (Alkali Manufacture)	..	..	..	..	10.30	..	..	..	1 10 0
„ Gas Analysis (*S.*) ..	..	.. (*at hours to be arranged*)				..	..	..	1 10 0

* Unless otherwise stated, the classes are continuous throughout the year.

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Classes*	Day and Hour						Fee		
	M.	Tu.	W.	Th.	F.	S.	One Term	Two Terms	Course
Chemistry—*contd.*							£ s. d.	£ s. d.	£ s. d.
Practical 1 (*A.L.*)	..	4.0	..	..	..	..	1 0 0	..	1 10 0
„ 2 (*A.L.S.*)	..	..	..	..	..	9.30-1	..	..	4 4 0
„ „ (*A.*)	..	..	..	2-5	..	..	..	..	2 2 0
„ 3	..	..	(*at hours to be arranged*)			..	..	..	2 2 0
„ 4 Organic	..	..	„	„	„	..	4 0 0	..	7 0 0
„ 5 (*A.L.*)	..	..	„	„	„	..	..	..	5 5 0
Laboratory	10-5	10-5	10-5	10-5	10-5	10-1	*For Laboratory and Composition Fees, see pp.* 187, 188.		
Natural History									
Element. Biology (*A.L.*)	11.30	..	11.30	..	11.30	..	2 0 0	..	3 0 0
Practical „ (*A.*)	..	9.30-11.30	..	9.30-11.30	9.30-11.30	..	2 0 0	..	..
„ „ (*L.*)	..	10.30-12.30	..	10.30-12.30	..	..	2 0 0	..	..
Zoology, General	9.30	..	9.30	..	9.30	..	2 0 0	3 0 0	4 0 0
„ Saturday Class	..	..	(*by arrangement*)		..	..	..	..	..
„ Revisal Class (*S.*)	11.30	..	11.30	..	11.30	..	3 0 0	..	..
Embryology (*S.*)	..	11.30	..	11.30	..	..	1 10 0	..	..
Comp. Anatomy	..	..	(*by arrangement*)		..	..	..	..	..
Comp. Osteology (*S.*)	..	..	„	„	..	..	2 0 0	..	..
Laboratory	10-1 2.5	10-1 2-5	10-1 2-5	10-1 2-5	10-1 2-5	..	*For Laboratory Fees, see p.* 196.		
Botany									
Course A, Theoretical (*L.*)	10.30	..	10.30	..	..	..	..	..	3 0 0
„ „ (*S.*)	10.30	..	10.30	..	10.30	..			
„ B, Practical (*L.*)	..	..	..	2-4	..	..	..	..	3 0 0
„ „ (*S.*)	..	10.30-12.30	..	10.30-12.30	..	..			
„ C, Theoretical	11.30	..	11.30	..	11.30	..	..	..	4 0 0
„ D, Practical	..	..	(*at hours to be arranged*)			..	..	..	6 0 0
„ E, Lectures	..	..	„	„	„	..	..	..	4 0 0
„ Practical Class	..	..	„	„	„	..	..	..	12 0 0
„ F, Diseases of Timber (*L*)	..	..	..	..	10.0	..	..	..	0 15 0
„ G, Pharmaceutical (*A.L.*)	..	..	2-4	..	..	..	..	..	3 3 0
„ „ (*S.*)	..	..	2-4	..	..	..	..	..	3 3 0
Laboratory	10.0-12.30 2-5	10.0-12.30 2.5	10.0-12.30 2-5	10.0-12.30 2-5	10.0-12.30 2-5	..	*For Laboratory Fees, see p.* 199.		
Physiology *Lectures*									
Systematic Phys. (*A.L.*)	11.30	11.30	..	11.30	11.30	..	2 10 0	..	4 4 0
Chemical Physiology (*S.*)	..	..	2.0	..	..	..	..	..	1 1 0
El. Psycho-Phys. (*A.L.*)	..	..	..	..	..	11.30	..	..	1 0 0
Histology (*S.*)	..	2.0	..	2.0	..	..	..	..	2 2 0

* Unless otherwise stated, the classes are continuous throughout the year.

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Classes*	Day and Hour						Fees		
	M.	Tu.	W.	Th.	F.	S.	One Term	Two Terms	Course
Physiology—*contd.*									
Laboratory Courses.									£ s. d.
Practical Phys. .. 1 (*A*)	..	2.0	..	..	1.30	..	..	..	2 2 0
„ .. .. 2 (*L.*)	2.0	..	9.0	..	1.30	..	..	..	4 4 0
„ Psycho-phys. 3 (*S.*)	..	3.30	..	..	..	..	..	..	..
Tutorial Class .. 4 (*L.S.*)	..	..	(*by arrangement*)		..	..	..	..	..
Practical Phys. .. 5 (*S.*)	2.0	..	2.0	..	2.0	..	..	..	3 3 0
„ Hist. .. 6 (*S.*)	11.30	..	11.30	..	11.30	..	..	..	5 5 0
Laboratory	10-5	10-5	10-5	10-5	10-5	..	*For Laboratory Fees, see p. 208.*		
Pharmacy †									
Materia Med., Jun. (*A.L.*) ..	9.0	..	9.0	..	9.0	..	..	..	2 2 0
„ Sen. (*S.*) ..	9.0	9.0	..	9.0	..	..	..	..	2 2 0
Pharmacy, Lectures (*A.L.*) ..	..	..	(*at hours to be arranged*)			..	..	..	2 2 0
„ Practical (*A.L.*) ..	..		„	„	„		..	..	2 2 0
Law									
Roman Law	5.0	..	..	..	3.15	..	*For Fees, see Time Table of Law Lectures and Classes issued in September.*		
Constitutional Law	..	..	1.0	..	..	..			
Jurisprudence	3.15	..	..	..	..	..			
Real and Personal Property (*L.S.*)	..	5.0	..	..	5.0	..			
Conveyancing (*A*)	..	..	5.0	..	5.0	..			
Equity (*L.S.*)	..	..	5.0	5.0	..	..			
Common Law, Contracts (*A.*)	..	..	..	5.0	..	..			
„ „ Torts (*L.S.*)	..	..	5.0	5.0	..	..			
Brokers and Factors (*L.*) ..	..	..	..	..	..	..			
Practice of the Courts (*A.*)	..	5.0	..	..	..	..			
Probate, Divorce, Admiralty (*L.S.*)	..	..	..	..	5.0	..			
Architecture									
(Year I)							*For Fees, see Syllabus of the School of Architecture and Applied Art.*		
Freehand Drawing	..	10-1	..	10-1	..	..			
History of Architecture ..	..	..	..	..	10.30-1	..			
Materials and Construction	10.30-1	..	..	..	..	..			
Studio Work (*A.L.*) ..	2-4.30	2-4.30	2-4.30	2-4.30	2-4.30	..			
	..	..	10-1	..	..	..			
„ „ (*S.*)	2-4.30	..	..	2-4.30	2-4.30	..			
Perspective & Sciography (*S.*)	..	..	10-1	..	..	..			
Graphic Statics (*S.*)	..	2-4.30	..	..	..	..			
Outdoor Sketching (*S.*) ..	..	..	p.m.	..	..	..			
(Year II)									
Freehand Drawing (*A.L.*) ..	2-4	..	..	2-4	..	..			
Modelling (*A.L.*)	..	2-4.30	..	..	2-4.30	..			
„ (*S.*)	2-4.30	..	..	..	2-4.30	..			
History of Architecture ..	..	10-1	..	..	..	..			
Materials and Construction	..	..	..	10-1	..	..			
Engineering (*S.*)	..	10.30	..	10.30	..	10-0			
Timber (*L.*)	..	..	..	..	10.0	..			
Outdoor Sketching (*S.*) ..	..	..	p.m.	..	..	..			
Studio Work	10-1	..	..	..	10-1	..			
„ „ (*A.L.*) ..	..	2-4.30	..	..	..	..			
„ „ (*A.S.*) ..	..	10-1	..	..	..	..			
„ „ (*L.*)	..	10-11½	..	..	..	..			

* Unless otherwise stated, the classes are continuous throughout the year.

† For Fees for other courses in School of Pharmacy, and Composition Fees, see pp. 210-213.

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CLASSES FOR VICTORIA UNIVERSITY COURSES

(ORDINARY DEGREES)

Preliminary

SUBJECT	CLASSES	DAY AND HOUR						TERM. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
English Language	Composition, Prel.	..	2.0	..	..	..	..	A. L.
" "	English Language, Prel.	..	..	..	2.0	..	..	A. L. S.
" History	Modern History, Prel.	2.0	..	..	..	2.0	..	A. L. S.
Mathematics	Pure Mathematics, Prel.	11.30	..	11.30	..	11.30	..	A. L. S.
Greek	Greek Translation, Prel.	9.30	..	9.30	..	9.30	..	A. L. S.
"	" Comp., Prel., Int.	..	9.30	..	9.30	..	..	A. L. S.
Latin	Latin Translation, Prel.	10.30	..	10.30	..	10.30	..	A. L. S.
"	" Comp., Prel., Int.	..	10.30	..	10.30	..	..	A. L. S.
French	French, Prel.	12.30	..	12.30	..	12.30	..	A. L. S.
German	German, Prel.	4.0	..	4.0	..	4.0	..	A. L. S.
Italian	Italian, Prel.	9.30	..	..	..	9.30	..	A. L. S.
Elem. Mechanics	Elem. Mechanics	..	11.30	..	11.30	..	10.0	A. L. S.
Elem. Chemistry	Chem., El. and Pract. I	3.0	3.0 / 4.0	..	3.0	3.0	..	A. L. S.
Geography	Polit. and Comm. Geog.	..	..	..	10.30	..	..	A. L. S.
"	Physical Geography	..	..	..	..	..	11.0	A. L. S.

Intermediate B.A.

SUBJECT	CLASSES	DAY AND HOUR						TERM. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
Pure Math.	Pure Mathematics, Int.	9.30	..	9.30	..	9.30	..	A. L. S.
Logic	Logic	9.15	..	9.15	..	..	..	A. L. S.
Ancient History	Ancient History, Int.	..	12.30	..	12.30	..	..	A. L. S.
Modern History	.. ..	..	..	10.30	..	10.30	..	A. L. S.
Greek	Greek Trans., Int.	10.30	..	10.30	..	..	..	A. L. S.
"	" Comp., Int., Fin.	..	9.30	..	..	10.30	..	A. L. S.
Latin	Latin Trans., Int.	12.30	..	12.30	..	..	..	A. L. S.
"	" Comp., Int., Fin.	..	..	..	10.30	12.30	..	A. L. S.
French	French, Int.	2.0	..	2.0	..	2.0	..	A. L. S.
German	German, Int.	3.0	..	3.0	..	3.0	..	A. L. S.
Italian	Italian, Int.	2.0	..	..	..	2.0	..	A. L. S.
English	English, Int.	..	3.0	..	12.30	..	..	A. L. S.
Applied Math.	Applied Math., Int.	..	9.30	..	9.30	..	9.0	A. L. S.
Physics	Physics, Jun.	4.0	12.30	..	12.30	..	..	A. L. S.
"	" Practical	..	..	..	..	12.30	..	A. L. S.
Eng. Literature	Eng. Lit., Int., Fin.	11.30	..	11.30	..	11.30	..	A. L. S.

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Final B.A.

Subject	Classes	Day and Hour						Term. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
Eng. Literature ..	Eng. Literature, Fin. ..	11.30	..	11.30	..	11.30	..	A. L. S.
Greek	Greek Trans., Fin. ..	12.30	..	12.30	..	..	..	A. L. S.
„	„ Comp., Fin. ..	..	..	..	..	10.30	..	A. L. S.
Latin	Latin Trans., Fin. ..	9.30	..	9.30	..	9.30	..	A. L. S.
„	„ Comp., Fin. ..	..	..	..	..	12.30	..	A. L. S.
French	French, Fin. ..	3.0	..	3.0	..	3.0	..	A. L. S.
German	German, Fin. ..	2.0	..	2.0	..	2.0	..	A. L. S.
Italian	Italian, Fin. ..	..	2.0	..	2.0	..	..	A. L. S.
English	Early English, Fin. ..	..	10.30	..	10.30	..	..	A. L. S.
„	Gothic	12.30	..	..	..	..	..	A. L. S.
Greek History ..	Greek History, Fin. ..	10.30	..	..	4.0	..	..	A. L. S.
Roman History ..	Roman History, Fin. ..	..	10.30	..	10.30	..	..	A. L. S.
Modern History ..	Modern History, Fin. ..	..	9.30	..	9.30	..	..	A. L. S.
Economic History	Economic History ..	..	2.0	..	..	..	..	A. L. S.
Political Economy	Political Economy, A. ..	..	12.30	..	12.30	..	..	A. L. S.
„ „	„ „ B. ..	..	..	..	2.0	..	..	A. L. S.
Pure Math. ..	Pure Math., Fin.	10.30	..	10.30	..	10.30	..	A. L. S.
Applied Math. ..	Applied Math., Fin. ..	..	11.30	..	11.30	..	11.0	A. L. S.
Philosophy ..	Psychology	..	11.30	..	11.30	..	..	A. L. S.
„	Ethics	..	10.30	..	..	..	..	A. L. S.
Hist. Philosophy ..	Ancient Philosophy ..	..	10.30	10.30	..	..	..	A. L. S.

Intermediate B.Sc.

Subject	Classes	Day and Hour						Term. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
Pure Math. ..	Pure Mathematics, Int. ..	9.30	..	9.30	..	9.30	..	A. L. S.
Applied „	Applied Math., Int. ..	..	9.30	..	9.30	..	9.0	A. L. S.
Physics	Physics, Jun.	4.0	12.30	..	12.30	..	..	A. L. S.
„	„ Practical ..	..	..	..	..	12.30	..	A. L. S.
Chemistry ..	Chemistry, A *or* B ..	..	11.30	..	11.30	..	..	A. L.
		..	9.30	..	9.30	..	..	A. L.
„	„ Elementary ..	3.0	3.0	..	3.0	3.0	..	S.
„	„ Practical II ..	..	..	..	2.0	..	9.30	A. L. S.
						..	9.30	L. S.
Biology	Biology, Elementary ..	11.30	..	11.30	..	11.30	..	A. L.
„	„ Practical ..	..	9.30	..	9.30	..	..	A.
„	„ „	..	10.30	..	10.30	..	..	L.
„	Zoology, Revisal	11.30	..	11.30	..	11.30	..	S.
Botany	Botany, Course A, Theoret.	10.30	..	10.30	..	..	..	L.
„	„ „ A, „	10.30	..	10.30	..	10.30	..	S.
„	„ „ B, Practical	..	..	..	2.0	..	..	L.
„	„ „ B, „	..	10.30	..	10.30	..	..	S.
Applied Mech. ..	Engineering, I	10.30	..	..	10.30	..	9.0	A. L. S.
„ „ ..	Drawing and Design, A ..	2.0	..	..	3.0	..	..	A. L.
„ „ ..	„ „ A ..	..	..	..	2.0	..	..	S.
„ „ ..	Desc. Geometry, I ..	..	2.0	..	2.0	..	..	A. L.
Surveying	Surveying	12.30	2.0	..	..	..	..	S.
„	Drawing and Design, A ..	2.0	..	..	3.0	..	..	A. L.
„	„ „ A ..	..	..	..	2.0	..	..	S.
„	Desc. Geometry, I ..	..	2.0	..	2.0	..	..	A. L.

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Final B.Sc.

Subject	Classes	Day and Hour						Term. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
Pure Math.	Pure Math., Fin.	10.30	..	10.30	..	10.30	..	A. L. S.
Applied Math.	Applied Math., Fin.	..	11.30	..	11.30	..	11.0	A. L. S.
Physics	Physics, Int.	..	4.0	12.30	4.0	..	..	A. L. S.
"	" Sen.	12.30	..	9.30	..	..	..	A. L. S.
Chemistry	Chemistry, A *or* B	..	11.30 / 9.30	..	11.30 / 9.30	..	..	A. L. S.
"	Organic Chemistry, C	9.30	..	..	..	9.30	..	A. L. S.
Zoology	Zoology, General	9.30	..	9.30	..	9.30	..	A. L. S.
"	Embryology	..	11.30	..	11.30	..	..	S.
Botany	Botany, C	11.30	..	11.30	..	11.30	..	A. L. S.
"	" D	*(at hours to be arranged)*						
Physiology	Systematic Physiology	11.30	11.30	..	11.30	11.30	..	A. L.
"	Histology	..	2.0	..	2.0	..	..	S.
"	Psycho-Physiology	..	..	..	..	..	11.30	A. L.
Ment. and Moral Science	Psychology	..	11.30	..	11.30	..	..	A. L. S.
	Ethics	..	10.30	..	..	..	..	A. L. S.
	Advanced Psychology	*(at hours to be arranged)*						A. L. S.
Engineering	Engineering, II	..	10.30	..	10.30	..	10.0	A. L. S.
"	Drawing & Design, B	12.30 / 3.0	..	..	..	..	..	A. L. / A. L. S.
"	Descrip. Geometry, II	..	2.0	..	..	..	12.30	A. L.
"	Surveying	12.30	2.0	..	..	..	..	S.
Applied Mech.	Engineering, II	..	10.30	..	10.30	..	10.0	A. L. S.
	Drawing & Design, B	12.30 / 3.0	..	..	..	..	..	A. L. / A. L. S.
Electricity	Electrotechnics, Jun.	2.0	..	..	2.0	2.0	..	A. L. S.

Intermediate LL.B.

Subject	Classes	Day and Hour						Term. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
Roman Law	Roman Law	5.0	..	..	..	3.15	..	A. L. S.
Law and Custom of the English Constitution	Constitutional Law	..	..	1.0	..	..	..	A. L. S.
Jurisprudence	Jurisprudence	3.15	..	..	..	..	..	A. L. S.
Logic	Logic	9.15	..	9.15	..	..	..	A. L. S.
Political Economy	Political Economy, A	..	12.30	..	12.30	..	..	A. L. S.
Ancient History	Ancient History, Int.	..	12.30	..	12.30	..	..	A. L. S.

Final LL.B.

Subject	Classes	Day and Hour						Term. Autumn, Lent, Summer
		M.	Tu.	W.	Th.	F.	S.	
English Law	Real Property / Personal Property	..	5.0	..	..	5.0	..	A.
"	" "	..	5.0	..	..	5.0	..	L. S.
"	Equity	..	..	5.0	5.0	..	..	L. S.
"	Contracts	..	..	..	5.0	..	..	A.
"	Torts	..	..	5.0	5.0	..	..	L. S.
"	Brokers and Factors	..	*(at hours to be arranged)*				..	
"	Practice of the Courts	..	5.0	..	..	..	..	A.
"	Probate, Divorce, Admiralty	..	..	..	..	5.0	..	L. S.

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SYLLABUS OF DAY CLASSES

GREEK

Chair founded by Citizens of Liverpool, 1881

Professor: GILBERT A. DAVIES, M.A.

Professor of Classical Literature: A. W. W. DALE, M.A.

Assistant Professor: P. HEBBLETHWAITE, M.A.

Preliminary

Translation

Monday, Wednesday, Friday, 9.30-10.30.

AUTUMN TERM.—Aeschylus, *Prometheus Vinctus*, a subject also for the London Matriculation, January, 1901.

Text-Book.—Aeschylus, *Prometheus Vinctus*, ed. Prickard, Rackham, or Sikes and Wynne Willson.

LENT TERM.—Lucian, *Charon* and *Timon*, a subject also for the London Matriculation, June, 1901.

Text-Book.—Lucian, *Charon*, ed. Heitland; Lucian, *Timon*, ed. Mackie.

SUMMER TERM.—Revision of Aeschylus and Lucian, with practice in unseen translation.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Grammar and Composition

Thursday, 9.30-10.30.

The course will consist of grammatical instruction with catechetical drill in accidence and elementary syntax, and practice in translation. All candidates who intend

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to pursue Classics beyond the Preliminary should also attend the Intermediate class on Tuesday.

Text-Books.—Rutherford, *First Greek Grammar and Syntax*; Underhill, *Easy Exercises in Greek Accidence.*

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Intermediate

Translation

Monday, Wednesday, 10.30-11.30.

AUTUMN TERM.—Lysias, *Contra Eratosthenem*, a subject also for the London Intermediate; Xenophon, *Hellenica*, ii, ch. 3, 4.

Text-Books.—Lysias, *Orationes*, ed. Shuckburgh; Xenophon, *Hellenica*, ii, ed. Edwards or Underhill.

LENT TERM.—Homer, *Iliad*, xxi, xxii, a subject also for Classical Honours, and part of the subject for the London Final.

Text-Book.—Homer, *Iliad*, xxi, xxii, ed. Monro or Leaf.

SUMMER TERM.—Revision of Lysias and Homer, with practice in unseen translation.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Grammar and Composition

Tuesday, 9.30-10.30.

This class is supplementary to the grammar class held on Thursday, and intended for the study of Greek syntax structure. Elementary Greek syntax will be systematically covered in the course of the session.

Text-Books.—Nall, *Exercises on First Greek Syntax*; Rutherford, *First Greek Grammar and Syntax.*

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2; for combined Junior and Intermediate, or combined Intermediate and Senior—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

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Final

Translation

Monday, Wednesday, 12.30-1.30.

AUTUMN TERM.—Sophocles, *Philoctetes*, a subject also for the M.A. and Honours in Classics.

Text-Book.—Sophocles, *Philoctetes*, ed. Campbell and Abbott.

LENT TERM.—Plato, *Republic*, viii, ix, a subject also for the M.A. and Honours in Classics, and London Final.

Text-Book.—Plato, *Republic*, ed. Adam.

SUMMER TERM.—Revision of Sophocles and Plato with practice in unseen translation.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Grammar and Composition

Friday, 10.30-11.30.

This class is intended for composition and systematic instruction in higher syntax. Weekly passages of prose will be set, which will be corrected and returned to those attending the class.

Text-Books.—Sidgwick, *Greek Prose Composition*; Rutherford, *First Greek Syntax*.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Honours

Translation

Tuesday, Thursday, 11.30-12.30.

AUTUMN TERM.—Thucydides, ii.

LENT TERM.—Aristophanes, *Nubes*.

SUMMER TERM.—Aeschylus, *Choephori*.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

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Unseen Translation

Monday, 11.30-12.30.

A special class will be held weekly for practice in unseen translation and study of the subject matter of books prescribed for M.A. and Classical Honours.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Composition

For Honours students, advanced beyond the stage of class teaching, individual arrangements will be made for the correction of exercises in prose or verse.

Fee.—For one exercise weekly—One Term, £1; Two Terms, £1 10s.; Course, £2. For two exercises weekly (Prose and Verse)—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

EVENING LECTURES

See Evening Syllabus.

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LATIN

Chair founded by Citizens of Liverpool, 1884

Professor : HERBERT A. STRONG, M.A., LL.D.
Professor of Classical Literature : A. W. W. DALE, M.A.
Assistant Professor : P. HEBBLETHWAITE, M.A.

Preliminary

Translation

Monday, Wednesday, Friday, 10.30-11.30.

AUTUMN TERM.—Cæsar, *de Bello Civili*, i, cc. 1-55.

Text-Book.—Cæsar, *de Bello Civili*, i, ed. Peskett, Montgomery, or Moberly.

LENT TERM.—Vergil, *Æneid*, ii, a subject also for London Matriculation, January, 1901.

Text-Book.—Vergil, *Æneid*, ii, ed. Conington, Sidgwick, or Page.

SUMMER TERM.—The prescribed books of Cæsar and Vergil will be revised, and there will be systematic practice in translating at sight.

Fee.—One Term, £2 ; Two Terms, £3 ; Course, £4.

Grammar and Composition

Tuesday, 10.30-11.30.

Instruction will be given in accidence, syntax, and elementary prose composition. Instruction will also be given in translating easy Latin passages at sight.

Text-Books.—Allen, *Elementary Latin Grammar* ; Bradley, *Arnold's Latin Prose Composition* ; Hardy, *Latin Reader*.

Fee.—One Term, £1 ; Two Terms, £1 10s. ; Course, £2.

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Intermediate

Translation

Monday, Wednesday, 12.30-1.30.

AUTUMN TERM.—Livy, vi.

Text-Book.—Livy, vi, ed. Stephenson, or Cluer and Matheson.

LENT TERM,—Vergil, *Georgics*, i, ii, a subject also for the M.A., Classical Honours, and London Final.

Text-Book.—Vergil, *Georgics*, i, ii, ed. Conington, Sidgwick, or Page.

SUMMER TERM.—The prescribed books of Livy and Vergil will be revised, and some new author read, probably Horace, *Odes*, iii, iv.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Grammar and Composition

Thursday, 10.30-11.30.

Class for composition and translation at sight.

Text-Books.—Bradley, *Arnold's Latin Prose Composition*; Jerram, *Anglice Reddenda*.

Fee—One Term, £1; Two Terms, £1 10s.; Course, £2. For combined Junior and Intermediate, or combined Intermediate and Senior—One Term, £1 7s. 6.; Two Terms, £2 2s.; Course, £3.

Final

Translation

Monday, Wednesday, Friday, 9.30-10.30.

AUTUMN TERM.—Tacitus, *Annals*, i, a subject also for the M.A., Classical Honours, and London Intermediate.

Text-Book.—Tacitus, *Annals*, i, ed. Furneaux.

LENT TERM.—Juvenal, *Satires*, i, iii, iv, a subject also for Classical Honours and London Final.

Text-Book.—Juvenal, *Satires*, ed. Pearson and Strong, Duff, or Hardy.

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SUMMER TERM.—The prescribed books of Tacitus and Juvenal will be revised, and some new author read, probably Cicero, *Philippics*, ii.

Fee—One Term, £2; Two Terms, £3; Course, £4.

Grammar and Composition

Friday, 12.30-1.30.

Class for composition (prose and verse) and translation at sight; students will be required to send in written exercises for correction and comment.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Honours and M.A.

Translation

Tuesday, Thursday, 9.30-10.30.

This class is intended for a more rapid reading of some of the less familiar Latin authors, and will be specially directed to covering the ground required by candidates for the M.A. and Classical Honours.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Composition

For Honours students, advanced beyond the stage of class teaching, individual arrangements will be made for the correction of exercises in prose or verse.

Fee.—For one exercise weekly—One Term, £1; Two Terms, £1 10s.; Course, £2; for two exercises weekly (prose and verse)—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

EVENING LECTURES

See Evening Syllabus.

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FRENCH

Lectureship unendowed

Lecturer: CHARLES BONNIER, Ph.D.

Preliminary

Monday, Wednesday, Friday, 12.30-1.30.

The work in this class will include the revision of accidence, the study of elementary syntax, reading prose and poetry, composition and translation into French of easy passages from English authors.

Text-Books.—Mme. de Witt, *Derrière les Haies*; Labiche et Jolly, *La Grammaire*; Brachet et Dussouchet, *Grammaire française complète* (5e éd., Hachette, Paris, 1893).

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Intermediate

Monday, Wednesday, Friday, 2.0-3.0.

The work in this class will include the study of syntax, reading, paraphrasing, translation of prepared passages, dictation. The class will be, to a certain extent, conducted in French.

Text-Books.—Alfred de Musset, *Morceaux choisis* (prose) (éd. Hachette); Brachet et Dussouchet, *Grammaire française complète* (5e éd., Hachette, Paris, 1893).

Fee.—One Term, £2; Two Terms, £3; Course, £4.

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Final

Monday, Wednesday, Friday, 3.0-4.0.

The work in this class will include the translation into French of unprepared passages from English authors; short essays on the prescribed period of literature will be corrected and returned. The class will be conducted in French.

Wednesday will be reserved for lectures (delivered *in French*) on the prescribed period of literature: *Les grands prosateurs du 17e siècle.*

Text-Books.—Boileau, *Art Poétique*; Lanson, *Histoire de la Littérature française* (Hachette); Brachet et Dussouchet, *Grammaire française complète* (5e éd., Hachette, Paris, 1893).

Fee.—One Term, £2; Two Terms, £3; Course, £4; or, without the Wednesday Lectures—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

French Literature

Wednesday, 3.0-4.0.

The lectures on the period of French literature, *Les grands prosateurs du 17e siècle*, will be a special feature of literary teaching, and will be open also to persons not attending any other class.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2; or, if taken *in conjunction with the Junior or Intermediate Class*—One Term, 15s.; Two Terms, £1 2s. 6d.; Course, £1 10s.

Honours and M.A.

Monday, Wednesday, Friday, 10.30-11.30.

This course will be suitable for students who are reading for the M.A., or Honours in Modern Languages and Literatures. The prescribed books and periods will be found on pp. 43, 47.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

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Romance Philology

A separate course of lectures on LOW LATIN, HISTORICAL FRENCH GRAMMAR and PROVENÇAL will be arranged for advanced students in Latin, French, Italian, and Spanish. The day and the hour will be fixed at the beginning of the session.

EVENING LECTURES

See Evening Syllabus.

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GERMAN

Chair endowed for five years

Professor : KUNO MEYER, Ph.D., M.A.

Preliminary

Monday, Wednesday, Friday, 4.0-5.0.

Text-Books.—AUTUMN TERM.—K. Meyer, *German Reader*.

LENT TERM.—W. Hauff, *Die Karawane*, ed. H. Hager.

SUMMER TERM.—Lessing, *Fabeln*., ed. K. Breul.
K. Meyer, *German Grammar*, and Macgowan, *Second German Reader and Writer*, will be used throughout the session.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Intermediate

Monday, Wednesday, Friday, 3.0-4.0.

Text-Books.—K. Meyer, *German Grammar*; E. von Wildenbruch, *Harold*; Fiedler, *Third German Reader and Writer* (Sonnenschein).

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Final

Monday, Wednesday, Friday, 2.0-3.0.

Text-Books.—Goethe, *Egmont*.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

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German Literature

Wednesday, 2.0-3.0.

AUTUMN AND LENT TERMS.—Period: Goethe's life and works.

This course will be open to persons not attending the Final class on payment of the following fees:—

One Term, £1; Course, £1 10s.

Honours and M.A.

Tuesday, 2.0-3.0; Thursday, 11.30-12.30.

For set books and periods, see pp. 34, 37.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Special Class

Tuesday, 3.0-4.0.

AUTUMN AND LENT TERMS.—History of Old and Middle High-German literature.

Fee.—One Term, £1; Course, £1 10s.

EVENING LECTURES

See Evening Syllabus.

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ITALIAN

Lectureship partly endowed

Lecturer: CHEVALIER LONDINI, D.C.L.

Preliminary

Monday, Friday, 9.30-10.30.

This class will be suitable for beginners in Italian, and instruction, especially during the AUTUMN TERM, will be chiefly confined to the elements of Italian grammar, and easy reading and translation.

Text-Books.—AUTUMN TERM.—Sauer, *Italian Grammar*; Rossetti, *Cento aneddoti Italiani*.

LENT AND SUMMER TERMS.—Sauer, *Italian Grammar*; Ferrari, *Dante a Verona*; Addison, *Essay on the Imagination*.

Fee.—One Term, £2; Two Terms, £3; Course £4.

Intermediate

Monday, Friday, 2.0-3.0.

This class will be suitable also for candidates for the London B.A. For the Home or Indian Civil Service Examinations, for which Italian is a recognized and important subject, either this class or the Final is recommended. Particular attention will be given to the study of Italian syntax, and constant practice will be maintained in composition in the form of letters and short essays.

Text-Books.—Sauer, *Italian Grammar*, Part ii; Foscolo, *Lettere di Jacopo Ortis*; Alfieri, *Antigone*; Macaulay, *Essay on Macchiavelli*, for translation into Italian.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Final

Tuesday, Thursday, 2.0-3.0.

Composition of high standard will be expected from students attending this class, as well as translation at sight of difficult passages from and into Italian. The

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class will be suitable also for the M.A., Certificates for Women, Cambridge Higher Local, and the Oxford Examination for Women.

Text-Book.—Guerrazzi, *Burlamacchi.*

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Special Class

In addition to the Final Class, a Special Class, to be held once a week throughout the session, is recommended to candidates for Certificates for Women, for the study of historical grammar, Italian literature (period, 16th century), as well as for practice in composition. Students attending this class are recommended to supply themselves with De Mattio, *Historical Grammar*, and Ambrosoli, *Manuale della Letteratura Italiana.*

The day and hour for the class will be fixed after consultation with the students.

Fee.—£2 10s. for the course.

M.A. and Certificates of Distinction

The books prescribed for the Victoria M.A. (see p. 59) will be studied, so far as time will allow, as well as the period of literature (14th and 15th centuries).

Days and hours will be fixed by arrangement.

Fee.—One Term, £2; Two Terms, £3; Three Terms, £4.

N.B.—Except in cases where University requirements render strict adherence to the above programme necessary, arrangements will be made to meet the needs of the various classes, both in regard to books selected for reading and the hours of lectures.

Evening Lectures

See Evening Syllabus.

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ENGLISH LANGUAGE

Lectureship unendowed

Lecturer: HENRY C. WYLD, B.Litt.

Preliminary

Thursday, 2.0-3.0.

General sketch of the origin and development of the English language.

Text-Book.—Sweet, *Primer of Historical English Grammar.*

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Intermediate

Tuesday, 3.0-4.0; Thursday, 12.30-1.30.

This course, intended for beginners in Old English, will deal chiefly with elementary Old English (West Saxon) grammar and phonology. Prose pieces will also be read in class from the following books:

Sweet, *First Steps in Anglo-Saxon*; Morris & Skeat, *Specimens*, vol. i nos. 5, 6; Sweet, *Anglo-Saxon Reader*, sect. 1-10.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Final and M.A.

(1) Early English

Tuesday, Thursday, 10.30-11.30.

This course will deal with the grammar and phonology of the Old English dialects. Poetical texts will be read

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in class. A knowledge of Gothic will be assumed in students taking this course.

Text-Books.—Sievers, *Anglo-Saxon Grammar*, (Cook's Translation); Sweet, *Anglo-Saxon Reader*, sect. 20, 21, 24, 29; Beowulf, vv, 1888-end; *Kluge, Anglesächsisches Lesebuch.*

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

(2) Gothic

Monday, 12.30-1.30.

This course will deal more especially with the phonology of Gothic, considered in relation to Germanic. For purposes of comparison special reference will be made to Old English, and Old High German.

Text-Book.—Wright, *Gothic Primer*; Streitberg, *Urgerm Grammatik.*

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Honours

Monday, Wednesday, 10.30-11.30.

The work in this class will consist chiefly of a grammatical investigation of Old and Middle English texts, under the supervision of the lecturer. The object of the course will be to teach the methods of investigation to advanced students, and to familiarise them with the first-hand sources of knowledge. As most of the special work on English is written in German, a practical knowledge of that language is absolutely indispensable to those who propose to read for Honours in the English language. For books prescribed by Victoria University, see p. 43.

Text-Books.—Paul, *Grundriss d. german. Philologie*; Wülker, *Grundriss d. anglesächsischen Literatut*; Sievers, *ags. Gr.*

Evening Lectures

See Evening Syllabus.

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PHONETICS

Honorary Readership instituted in recognition of the Scholarship of the present holder, 1898

Reader: R. J. LLOYD, D.LIT., M.A.

Tuesday, 4.0-5.0.

AUTUMN TERM.—General Phonetics, with special reference to the sounds of English.

LENT TERM.—The Phonetics of French.

SUMMER TERM.—The Phonetics of German.

Text-Books.—Lloyd, *Northern English*; Passy, *Les Sons du Français*; Rippmann, *Phonetics*.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

EVENING LECTURES

See Evening Syllabus.

ICELANDIC

Honorary Readership instituted in recognition of the Scholarship of the present holder, 1896

Reader: Rev. J. SEPHTON, M.A.

Tuesday, 11.30-12.30.

The Reader in Icelandic is prepared to hold a class, one hour or more weekly, throughout the session, for students who take Icelandic as a portion of the work

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prescribed for the Honours school of English language and literature. (See Vict. Univ. Cal. p. 125).

Text-Book.—Vigfusson and Powell, *Icelandic Prose Reader*.

Fee.—One Term £1 ; Two Terms, £1 10s. ; Course, £2.

EVENING LECTURES

See Evening Syllabus.

CHINESE

Honorary Readership instituted in recognition of the Scholarship of the present holder, 1896

Reader : Mr. E. H. PARKER, formerly of H.B.M. Chinese Consular Service.

Mr. PARKER will arrange a course of study with students, if a class can be formed. His public lectures will be announced from time to time.

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MODERN LITERATURE AND ENGLISH LANGUAGE

Chair founded by Citizens of Liverpool, 1881

Professor : Vacant.

Preliminary

Tuesday, 2.0-3.0.

AUTUMN and LENT TERMS.—This class is held for the study and practice of English composition. Some lectures will be given, and those who attend will be required to write essays or exercises from time to time.

Fee.—One Term, £1 ; Two Terms, £1 10s. ; Course, £2.

Intermediate and Final

Monday, Wednesday, Friday, 11.30-12.30.

AUTUMN and LENT TERMS.—The subject of this course will be the history of English literature from 1557-1616 ; Sidney, *Defence of Poesy ;* Poems of Drayton and Daniel, as selected by H. C. Beeching (J. M. Dent and Co.) ; Shakespeare, *King Lear ;* Beaumont and Fletcher, *Knight of the Burning Pestle.*

Fee.—One Term, £2 ; Course, £3.

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Final

Monday, Wednesday, Friday, 11.30-12.30.

SUMMER TERM.—The subject of this course will be the history of English literature from 1616-1637; *The Two Noble Kinsmen*; Earle, *Microcosmographie.*

Fee.—£2.

Honours and M.A.

Monday, Friday, 12.30-1.30.

This course is intended primarily, but not exclusively, for candidates for the Degree of M.A. in English language and literature. The books prescribed for their reading, and the history of literature from 1784-1832, will be specially studied.

Candidates for Honours in English literature are requested to attend the first meeting of this class, that arrangements may be made for their curriculum.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Special Class

Wednesday, 3.0-4.0.

AUTUMN and LENT TERMS.—The subject of this course will be *Tennyson and Browning.* Some poems of each will be chosen for special study.

Fee.—One Term, £1; Course, £1 10s.

EVENING LECTURES

See Evening Syllabus.

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HISTORY

Chair Founded by Citizens of Liverpool, 1884

Professor : J. M. MACKAY, M.A.

Assistant Lecturer : J. R. B. MUIR, M.A.

MODERN HISTORY

Preliminary

Monday, Friday, 2.0-3.0.

Outlines of English history from the earliest times.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Intermediate

Wednesday, Friday, 10.30-11.30.

Outlines of European history from 1494.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Final

Tuesday, Thursday, 9.30-10.30.

English history, 1485-1603.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Honours and M.A.

Wednesday, 12.30-1.30.

English constitutional history.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

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Wednesday, 2.0-3.0.

General questions and essays.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Courses will be arranged in special subjects to meet the requirements of students who are reading for Honours in history or for graduation as Masters of Arts.

ANCIENT HISTORY

Intermediate

Tuesday, Thursday, 12.30-1.30.

Outlines of Greek and Roman history.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Final (Greek)

Monday, 10.30-11.30; Thursday, 4.0-5.0.

Greek history down to B.C. 431.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

Final (Roman)

Tuesday, Thursday, 10.30-11.30.

Roman history, B.C. 133–A.D. 14.

Fee.—One Term, £1 7s. 6d.; Two Terms, £2 2s.; Course, £3.

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Honours and M.A.

Classes will be arranged in special subjects to meet the requirements of students who are reading for Honours in history, or for graduation as Masters of Arts.

PALÆOGRAPHY

Mr. Sampson, librarian, and Mr. J. H. Lumby, will instruct advanced students and graduates to read mediæval charter deeds. Specimens especially illustrative of local history will be provided and explained.

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PHILOSOPHY

Chair founded by Messrs. Balfour, Williamson & Co., Mr. David Jardine, Mr. John Rew, Mr. Samuel Smith, and other Scottish Trading Houses of Liverpool, 1881.

Professor : JOHN MACCUNN, M.A., LL.D.

Logic

Monday, Wednesday, 9.15-10.15.

This course is for students preparing for the Victoria Intermediate, but is also suitable for the London B.A. or B.Sc. Candidates for the Victoria B.Sc. are at liberty to postpone this subject till their final year.

Students are advised to study Jevons' *Elementary Lessons in Logic* during the vacation ; and they are expected to furnish themselves with Mill's *Logic*, of which Books II and III will receive special attention.

Fee.—One Term, £1 7s. 6d. ; Two Terms, £2 2s. ; Course, £3.

Psychology

Tuesday, Thursday, 11.30-12.30.

Outlines of psychology.

Students may prepare for this course by reading James' *Text-book of Psychology.*

Students taking philosophy for the Victoria Final B.A. are required to attend the classes both in psychology and ethics.

Fee.—One Term, £1 7s. 6d. ; Two Terms, £2 2s. ; Course, £3.

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Students who wish to study those portions of physiology which are of especial psychological interest, are recommended to attend Professor SHERRINGTON's lecture (see p. 204) in the LENT TERM.

Advanced Psychology

A class in this subject, designed for candidates for the Victoria Final B.Sc., will meet twice a week, at hours to be hereafter arranged.

Ethics

Tuesday, 10.30-11.30.

An introduction to the study of ethics.

Special attention will be given to the ethical doctrines of Kant and Mill.

Fee.—One Term, £1 ; Two Terms, £1 10s. ; Course, £2.

History of Ancient Philosophy

Wednesday, Friday, 10.30-11.30.

AUTUMN TERM.—Greek philosophy, from Thales to the Stoics and Epicureans inclusive.

LENT TERM.—The *Republic* of Plato, being the prescribed book for the Final B.A. The dialogue will be read in the translation of Davies and Vaughan.

Students attending this class are recommended to read Windelband, *History of Philosophy.*

Fee.—One Term, £1 7s. 6d. ; Two Terms, £2 2s. ; Course, £3.

Aristotle's Ethics

Tuesday, 3.0-4.0.

This class is designed for students reading for Honours in classics. Books I and II of Aristotle's *Ethics* will be read in Greek.

Fee.—£2.

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EDUCATION

Chair founded by the City Council of Liverpool in 1899

Professor of Education : W. H. WOODWARD, B.A.
(Principal of the University Training College.)

Professor of Philosophy : J. MACCUNN, M.A., LL.D.

Tutor in Education : *Vacant.*

Assistant in Method : C. W. BAILEY, M.A.

The following courses on the theory, history, and practice of education are designed especially for candidates for the Teachers' Diploma of the Victoria University, or for the Certificate in Teaching of University College (for particulars, see p. 69). Being given under the grant from the Technical Committee of the City Council, they are open without payment of fee to all students in training at the University Training College, the Edge Hill Training College, or the Liverpool Training College for Women, and also to teachers in the training classes held under the Liverpool School Board who have passed the Queen's Scholarship examination in the first or second class. Applications will be received from other teachers who have passed the Queen's Scholarship examination in the first or second class, or from acting school teachers in secondary or elementary schools.

Students are advised to apply for detailed prospectus of this department in September, 1900.

Elementary Principles of Evidence and Inference

Professor J. MACCUNN, M.A., LL.D.

Saturday, 10.0-11.0.

AUTUMN TERM.—The course will include the following subjects :—The utility to the teacher of knowledge

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of the principles of evidence. Evidence and inference in ordinary life. Historical and judicial, as compared with scientific investigation. Scientific methods, observational and experimental. Explanation. Logical and other modes of expounding a subject. The place of analogy, metaphor, illustration, and instance in exposition and proof. Some fallacies.

A syllabus will be issued at the beginning of the course.

Fee.—6s.

Psychology with Applications to Education

Professor J. MacCunn, M.A., LL.D.

Saturday, 12.0-1.0.

Autumn, Lent, and Summer Terms.—The subjects dealt with will be the following:—Sources of knowledge of mind. Mental development. Elements of psychical life. General functions of mind: attention, discrimination, retention, and reproduction. General types of mind. Special functions of mind: perception, memory, imagination, conception, and reasoning.

All these subjects will be treated throughout with close reference to those applications which seem of especial importance to teachers.

Fee.—One Term, 6s.; Two Terms, 11s.; Course, 16s.

The Formation of Character

Professor J. MacCunn, M.A., LL.D.

Saturday, 10.0-11.0.

Lent and Summer Terms.—The subjects dealt with will be—

1. The beginnings of character: heredity, temperament, instincts. Instincts and desires. Habit.

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2. Formative agencies. Nature and 'natural reactions.' Social organisation (family, school, and other social agencies).
3. Special discussion of example and precept.
4. Training of the individual judgment. Self control, self development.
5. The comparative practical value of various types of ethical theory.

Text-Book.—MacCunn, *Formation of Character*.

Fee.—One Term, 6s.; Two Terms, 11s.

Special Class

This class will be held an hour afterwards to be arranged to suit the convenience of students. It will deal with Aristotle, *Ethics*, i-iii, c. 5; *Politics*, iv (vii), c. 17, and v (viii), being the books prescribed for the Teachers' Diploma of the Victoria University.

Fee.—One Term, 6s.; Two Terms, 11s.; Course, 16s.

HISTORY, THEORY, AND ART OF EDUCATION

Professor W. H. Woodward, B.A.

Course A

Saturday, 12.0-1.0.

Autumn Term.—The faculties of children; development and training; the principles of infant teaching; the kindergarten; object teaching.

Summer Term.—The beginnings of English. The educational value and methods of various subjects of instruction. Geography, history, arithmetic, manual instruction.

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Course B

Saturday, 11.0-12.0.

Autumn Term.—The historical growth of our elementary system. School hygiene. Principles of discipline.

Lent and Summer Terms.—School organisation, and the main principles of school management. Plato, *Republic*, ii-iv (in an English version), as illustrative of the educational idea of Plato.

Text-Book.—Bosanquet, *The Education of the Young*, from Plato (Cambridge Press.)

Course C

Saturday, 9.15-10.0.

Autumn, Lent, and Summer Terms.—The development of educational theory in Europe since the Renaissance.

Text-Book.—Quick, *Educational Reformers*.

Fee for each course.—One Term, 6s.; Two Terms, 11s.; Course, 16s.

The Teachers' Diploma of Victoria University

Special classes are held in the selected books required for the examination for the Diploma. Courses of criticism lessons, of demonstrations, and of practice in approved schools are arranged to meet the requirements of students.

The *composition fee* for all lectures and practical courses qualifying for the Diploma is £10.

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N.B.—A detailed syllabus of the subjects included in the course for the Diploma will be found in the prospectus of the Education Department of the College, to be issued in September, 1900.

Evening Lectures.

Wednesday, 7.30-8.30, beginning October 10.

Autumn Term.—Locke's *Thoughts on Education*, a subject for the Certificate examination of the Education Department, 1901.

Lent Term.—Froebel's *Education of Man*, ed. Herford, a subject for the same examination.

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ECONOMIC AND COMMERCIAL SCIENCE

Chair founded by Sir John T. Brunner, Bart., in 1891, in commemoration of his father, the Rev. John Brunner, of this city, and of his son, Mr. S. H. Brunner, a student of this College.

Professor : E. C. K. GONNER, M.A.

POLITICAL ECONOMY

COURSE A

Economic Theory

Tuesday, Thursday, 12.30-1.30.

This course is for students preparing for the Final B.A. (when Course B must also be taken), or for the Intermediate LL.B. It is also suitable for those beginning the study of political economy with a view either to private research, or for examinations other than those named above.

It treats of the following subjects :—

The sphere and method of economic enquiry. Use of terms and definitions.

Production :—Agents of production. Effect of conditions on efficiency. Land systems.

Value and exchange :—Value, exchange, money, paper money, banking, foreign exchanges.

Distribution of wealth : — Rent, interest, profits, wages. The effect on such distribution of trade unions, co-operative societies, insurance.

The consumption of wealth.

Text-Books.—Marshall, *Economics of Industry* ; Jevons, *Money*.

Fee.—One Term, £1 7s. 6d. ; Two Terms, £2 2s. ; Course, £3.

COURSE B

Descriptive Economics

Thursday, 2.0-30.

This course is for students preparing for the Final B.A., and should be taken in conjunction with Course A

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by those anxious to study economics both in theory and application.

Systems of production :—(*a*) Agriculture, land systems, systems of cultivation in England and their effect ; (*b*) Industry, large industries, their features and localization, joint stock companies ; (*c*) Effect of employments on health and efficiency in England.

Commerce and methods of exchange :—(*a*) Exchange, monetary system, banking, stock exchange, etc. ; (*b*) Markets, etc. ; (*c*) Transport, marine transport, railways.

Remuneration :—(*a*) Methods of remuneration, sliding scales, boards of arbitration and conciliation, co-operative societies, trade unions ; (*b*) Insurance, friendly societies.

Government :—(*a*) Supervision, Factory Acts, encouragement of thrift, industrial undertakings by public bodies ; (*b*) Finance, budget, loans and public debts, taxation.

Fee.—One Term, £1 ; Two Terms, £1 10s. ; Course £2.

Combined Fee for Courses A and B — One Term, £2 ; Two Terms, £3 ; Course, £4.

Advanced Economics

An advanced class in economics will be held, suitable for candidates for the M.A. and others.

The time of the class will be arranged to suit the convenience of students, who are requested to communicate with Professor GONNER.

Economic and Commercial History

Tuesday, 2.0-3.0.

This course is for students for the Final B.A., and for those engaged in the study of history or political economy. It will treat of the growth of England on ist economic and trade sides, chiefly during the sixteenth century, covering the period prescribed for the Final B.A. (1422-1603).

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Text-Book.—Cunningham, *Growth of English Industry and Commerce* (2nd ed.), vol. i.

Fee.—One Term, £1 ; Two Terms, £1 10s. ; Course, £2.

GEOGRAPHY

Commercial Geography

Tuesday, 10.30-11.30.

This course is for students of trade and its geographical condition. Such students should take in conjunction with it the course on political and commercial geography (see below).

AUTUMN TERM.—Geography of commercial products; places of manufacture and routes of communication; trade statistics of the United Kingdom.

LENT TERM.—British Empire.

SUMMER TERM.—Europe.

Text-Books.—Gonner, *Commercial Geography*; Zehden, *Commercial Geography.*

Fee.—One Term, £1 ; Two Terms, £1 10s. ; Course, £2.

Combined with next course : Fee — One Term, £1 7s. 6d. ; Two Terms, £2 2s. ; Course, £3.

Political and Commercial Geography (Outlines)

Thursday, 10.30-11.30.

This class together with that on physical geography, provides the instruction required for the Victoria Preliminary, and candidates for that examination should attend both courses. Students may, however, take either course separately if they desire to do so.

It treats of the following subjects :—

The general effect of physical conditions on the developments of the various countries.

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Chief physical and political features of importance.

The necessary conditions of development in manufacture, agriculture, and commerce.

The historical growth of the British Empire.

The principal colonies and dependencies. Their political and economic conditions and development.

Their relations with the United Kingdom.

The political and economic geography of the United Kingdom.

Fee.—One Term, £1 ; Two Terms, £1 10s ; Course, £2.

EVENING LECTURES.

See Evening Syllabus.

Physical Geography

Lecturer : J. LOMAS, A.R.C.S., F.G.S.

Saturday, 11.0-12.0.

The course will treat of the following subjects :—

The figure of the earth.

Water. Its composition and impurities. The configuration of the ocean basins. Ocean currents. Tides.

The agents at work on the surface of the earth. Rain, springs, mountain torrents, rivers, lakes, the sea, frost, ice, and wind.

The atmosphere. Its composition, impurities, moisture, temperature, and pressure. Winds and cyclones.

Chemical action in building up and destroying.

Work of plants and of animals in building up and destroying.

Earthquakes and volcanoes ; their origin and effects. Hot springs. Gradual upheaval and subsidence of the earth's crust.

Distribution of land and water.

Text-Books.—Mill, *The Realm of Nature ;* Huxley, *Physiography ;* Geikie, *Physical Geography.*

Fee.—One Term, £1 ; Two Terms, £1 10s.; Course, £2.

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MATHEMATICS

Chair founded by Citizens of Liverpool, 1884

Professor of Mathematics : F. S. CAREY, M.A.

Assistant Lecturers : { F. T. SHARPE, M.A.
W. A. HOUSTON, M.A.

PURE MATHEMATICS

I. Preliminary Course

Monday, Wednesday, Friday, 11.30-12.30.

Arithmetic, elementary algebra and plane geometry.

Text Books.—Hall and Knight, *Algebra* ; Hamblin Smith, *Elements of Geometry*.

Fee.—One Term, £2 ; Two Terms, £3 ; Course, £4.

II. Intermediate Course

Monday, Wednesday, Friday, 9.30-10.30.

Elementary plane trigonometry, algebra, geometry of the simpler solids, and analytical geometry of the straight line and circle.

The trigonometry will be commenced at the beginning of the Autumn Term.

Text Books.—Hamblin Smith, *Trigonometry* ; C. Smith, *Conic Sections* ; Carey, *Solid Geometry*.

Fee.—One Term, £2 ; Two Terms, £3 ; Course, £4.

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III. Final and First Year Honour Course

Monday, Wednesday, Friday, 10.30-11.30.

Analytical conics and the elements of the calculus.

The calculus will be commenced at the beginning of the Autumn Term.

Text Books.—C. Smith, *Conic Sections*; Lamb, *Infinitesimal Calculus.*

Fee.—One Term, £2; Two Terms, £3; Course, £4.

IV. Final and Second Year Honour Course

Tuesday, Thursday, 10.30-11.30; Saturday, 10.0-11.0.

Differential and integral calculus, differential equations, and solid geometry.

Text-Books.—Lamb, *Infinitesimal Calculus*; Forsyth, *Differential Equations*; C. Smith, *Solid Geometry.*

Fee.—One Term, £2; Two Terms, £3; Course, £4.

V. Third Year Honour Course

Differential equations, solid geometry, definite integrals, finite differences.

Students who wish to join this course should meet Professor CAREY at 12.30 on the first or second day of Term.

APPLIED MATHEMATICS

I. Intermediate and First Year Honour Course

Tuesday, Thursday, 9.30-10.30; Saturday, 9.0-10.0.

Statics, dynamics, hydrostatics.

Text-Books.—Loney, *Elements of Statics and Dynamics*; Greaves, *Hydrostatics.*

Fee.—One Term, £2; Two Terms, £3; Course, £4.

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II. Final and Second Year Honour Course

Tuesday, Thursday, 11.30-12.30 ; Saturday, 11.0-12.0.

Analytical statics, hydrostatics, dynamics of a particle, and elementary rigid dynamics.

Text-Books.—Routh, *Analytical Statics*, vol. i ; Tait and Steele, *Dynamics of a Particle.*

Fee.—One Term, £2 ; Two Terms, £3 ; Course, £4.

III. Third Year Honour Course

Rigid dynamics and hydrodynamics, attractions, and theory of waves.

Text-Books.—Routh, *Rigid Dynamics* ; Lamb, *Hydrodynamics.*

In the case or the above mathematical courses of lectures, three hours a week attendance will be required, whether the times are stated or are left open for arrangement between the Lecturer and the students, and the *fee* will be for One Term, £2 ; Two Terms, £3 ; Course, £4.

Extra Courses and Problem Papers

Short extra courses are given to students for Mathematical Honours to cover other parts of the curriculum ; the subjects of these courses are chosen at the beginning of each term.

Students for Mathematical Honours are expected to attempt the problem paper which is set about once a week.

Evening Lectures

See Evening Syllabus.

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PHYSICS

Chair founded by the Trustees of the Roger Lyon Jones Trust Fund, 1881

Professor : *Vacant.*

Demonstrator and Assistant Lecturer } W. H. DERRIMAN.

Lecture-Assistant : EDWARD E. ROBINSON.

Laboratory-Assistant : C. WOODS.

Mechanics, Heat, Electricity, Magnetism, Light, Sound, and Molecular Physics

The subject is sub-divided in two distinct ways, first with reference to the subject matter, and second with regard to the standard of difficulty and the probable capabilities of first, second, and third year students respectively. Five courses are carried on concurrently, and two or more of these can be attended simultaneously by students sufficiently advanced, or able to devote enough time to the subject.

Electricity and magnetism are treated as a branch of physics, and are also proceeded with in a more immediately practical manner in the electro-technical department. See pp. 146-150.

The fundamental subject of mechanics, *i.e.*, the study of matter and motion, a knowledge of which is essential to a proper understanding of any branch of science, is taught all through the session in a class which is conveniently taken along with or before the junior course of physics.

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Elementary Mechanics

Tuesday, Thursday, 11.30-12.30; Saturday 10.0-11.0.

Suitable for the Preliminary, London Matriculation, and first year engineering students.

AUTUMN TERM.—Statics and dynamics of simple machines and structures. General conditions of equilibrium.

LENT TERM.—The laws of motion; falling bodies; elements of curvilinear motion; projectiles.

SUMMER TERM.—Hydrostatics and pneumatics.

Text-Book.—Lodge, *Elementary Mechanics.*

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Junior Physics

The first year class meets four times a week as follows:—

Tuesday, Thursday, 12.30-1.30, experimental lecture. Monday, 4.0-5.0, exercise class. Monday or Friday morning, at such time as may be arranged, junior practical work in the laboratory. Students whose progress and regularity are not satisfactory may be excused further attendance on the practical course.

This course is suitable for the Intermediate in Science and the First Medical, or the London Preliminary Scientific (Medical); also for London Matriculation, during the Lent or during the Autumn and Summer Terms, according to the branch of elementary science selected. It is also adapted to first year engineering students.

AUTUMN TERM.—Elementary heat and general physics, including the laws of energy.

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LENT TERM.—The fundamental phenomena of electricity and magnetism.

SUMMER TERM.—Elementary light and sound, or geometrical and physical optics and acoustics.

Text-Book.—Knott, *Physics Elementary Text-Book.*

Books Recommended.—D. E. Jones, *Heat, Light, and Sound*; Yorke, *Magnetism and Electricity*; S. P. Thompson, *Electricity and Magnetism*, 1895 or later edition; Deschanel, *Natural Philosophy*; Daniell, *Physics for Students of Medicine.* For the practical class, Schuster and Lees, *Intermediate Course of Practical Physics.* Also for reading, Tyndall, *Heat*; and Tyndall, *Sound.* For exercises Jones, *Examples in Physics.*

Fee, including exercise and practical classes:—One Term, £3; Two Terms, £4 15s.; Three Terms, £6. The course is covered by the first M.B. composition fee, also by the engineering composition fee; but a uniform charge of 4s. 6d. is made in the laboratory on those attending the practical class, to cover the cost of the printed instructions supplied throughout the session, and of a thermometer, for the return of which 2s. is allowed.

Intermediate Physics

Wednesday, 12.30-1.30, experimental lecture.

Tuesday, Thursday, 4.0-5.0, lecture and exercise class.

Suitable for Final B.Sc., if supplemented by part of the senior course, and for London Intermediate Honours or B.Sc. pass; also for second year engineering and chemical students.

AUTUMN TERM.—Advanced heat and thermodynamics.

LENT TERM.—Magnetism and current electricity

SUMMER TERM.—Advanced light or physical optics.

Students are not admitted to this course unless they are attending or have already attended the junior course, except under special circumstances. It is, however, possible to take both courses at the same time, and those

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who are preparing for the London Intermediate in Science, in one year, may find it necessary to do so; but unless some initial knowledge is possessed, it will be found more satisfactory to spread the work over two years.

Second year students are expected to be able to work by themselves, to read the text-books recommended, and to bring difficulties which they are unable to resolve in conversation among themselves to the Professor or Demonstrator. The Intermediate course covers what is in many respects the most important ground in physics, and it is desirable to repeat it in another year, while proceeding with the senior course.

For laboratory work, attention is directed to the practical courses (see pp. 142, 144), and second year students are recommended to give a considerable amount of time to them.

Books Recommended.—Maxwell, *Heat*; Joubert, Foster and Atkinson, *Electricity and Magnetism*; Edser, *Heat for Advanced Students*; Emtage, *Light*; Glazebrook, *Physical Optics*; Preston, *Theory of Light*; Preston, *Theory of Heat*. Also the following:—Deschanel, *Natural Philosophy*, or Ganot, *Physics*; Maxwell, *Elementary Electricity*; Everett, *Vibratory Motion and Sound*; Gray, *Absolute Measurements in Electricity and Magnetism* (small edition).

Fee (not including laboratory work):—One Term, £2; Two Terms, £3; Course, £4.

Senior Physics

Monday, Friday, 12.30-1.30; Wednesday, 9.30-10.30.

Suitable for Victoria or London Final B.Sc. pass, and as part of the course for Honours in Physics, Victoria. Also for chemistry Honours students, especially in the Lent Term, and for third year engineering students.

Autumn Term.—Higher mechanics, elasticity, and viscosity.

Lent Term.—General or molecular physics, including the Kinetic theory of gases and capillarity.

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SUMMER TERM.—Higher electricity and magnetism.

An acquaintance with elementary infinitesimal calculus is required by students attending this course. It is possible to take the Intermediate and Senior courses together in the second year, and it may be necessary for students preparing for Final degree examinations to do so; but it would be better to take them successively, repeating Intermediate along with Senior in the third year, and giving much time to practical work.

Third year students should work in the physical laboratory, and must read a good deal by themselves. The Professor will be glad to direct their reading, and to answer difficulties.

Books recommended for reading, in addition to those mentioned above of which Preston's *Light*, Preston's *Heat*, and Foster's *Electricity* are the chief:—Everett, *Illustrations of the C.G.S. System of Units*; Tait, *Properties of Matter*; Ostwald, *Outlines of Physical Chemistry*; J. J. Thomson, *Elements of the Mathematical Theory of Electricity and Magnetism*; Poynting and Thomson, *Sound*; Risteen, *Molecular Theory*; J. J. Thomson, *Discharge of Electricity through Gases*; *Ency. Brit.*, Articles; Clausius, *Mechanical Theory of Heat*; Baynes, *Thermodynamics*; Tait, *Recent Advances in Physical Science*; Lodge, *Modern Views of Electricity*; Lord Kelvin, *Popular Lectures and Addresses*; Gray, *Electricity and Magnetism*, 2 vols.; Ewing, *Magnetic Induction in Iron and other Metals*; Helmholtz, *Sensations of Tone*; Fleming, *Alternate Current Transformer*, vol. 1; Helmholtz, *Popular Scientific Lectures*, 2 vols.; *Life of Faraday*; Faraday, *Experimental Researches*; *Life of Maxwell*; Maxwell, *Electricity and Magnetism*; J. J. Thomson, *Recent Researches in Electricity and Magnetism*.

Fee.—One Term, £2; Two Terms, £3; Three Terms, £4.

Advanced Physics

Wednesday, 11.30-12.30, or such other time as may be arranged.

A special course for advanced students on more mathematical physics, or on contemporary progress in physical science and other matters of interest.

Fee.—One Term, £1; Two Terms, £1 10s.; Three Terms, £2.

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READING ROOM

A reading room for the study of current scientific literature, and for reference to standard books on physics, is annexed to the department, and may be used by members of the Students' Physical Society.

STUDENTS' PHYSICAL SOCIETY

All physics students are recommended to join the Physical Society (see p. 16), and to contribute to its papers and discussions.

EVENING LABORATORY WORK

Throughout the session the laboratory will be open on Thursday evenings from 7.0 to 9.0, to a limited number of students, for practical work of a moderately elementary character. See syllabus of Evening Lectures.

PHYSICAL LABORATORY

Students who are able to satisfy the Demonstrator that they possess sufficient acquaintance with elementary Physics are admitted to the laboratory for training in practical work and manipulation.

Students work either independently or in pairs, at their own choice; the times during which they work can be privately arranged, within the laboratory hours, 9.30–1.30 and 2.0–5.0, so as to suit their other work as far as possible. The students' laboratory is closed from 1.30 to 2.0 and all day on Saturday, except to teachers who make special application.

A deposit of 10s. will be required of each laboratory student to cover the cost of breakages; the balance will be refunded at the end of the session, less a small sum required to cover the cost of the printed forms supplied. In cases of exceptional clumsiness a further deposit may become necessary before the end of the session.

Text-Books recommended.—Stewart & Gee, *Elementary Practical Physics*; Glazebrook & Shaw, *Practical Physics*; Henderson, *Practical*

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Electricity and Magnetism; Kohlrausch, *Physical Measurements*; *South Kensington Syllabus of Practical Instruction in Physics.*

Laboratory Fees

The fees for admission to the physical laboratory are as follows:

	One Term.	Two Term.	Session.
One day a week	£3	£4 10	£6
Two days a week	4	6 10	9
Three days a week	5	8 10	12
Five days a week	7	11 0	15

Laboratory students will be at liberty to remain in the laboratory throughout the working day. Two half-days may be taken by special arrangement; the hours of attendance will in such cases be definitely fixed.

Special Combined Laboratory Course for Students in Civil and Mechanical Engineering

Monday, 10.30-12.30; Friday, 3.0-5-0.

A special course of second year laboratory practice is arranged in both the physical and electrotechnical laboratories, which a certain number of students in civil and mechanical engineering, who have made satisfactory progress in physics, will have the option of attending instead of working in the wood-working department at the same hours. The course is covered by the second year engineering composition fee, but it may, by special permission, be taken by other students.

Fee.—The same as one day a week in either laboratory, viz., £6 for the course.

Special Course for First Year Students in Electrical Engineering

Electrical students who have sufficient knowledge may attend the physical laboratory on Tuesdays, 9.30-11.30,

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during the Lent and Summer terms in their first year instead of the wood-working department.

The course is included in their composition fee.

The above divisions lend themselves to the requirements of University examinations as follows :—

VICTORIA UNIVERSITY

Preliminary.—Mechanics.

First M.B. or *Intermediate B.Sc.*—Junior Physics with Junior practical work.

Ordinary Final B.Sc.—Intermediate and Senior Physics, with two days a week laboratory work.

B.Sc. Honours and *M.Sc.*—Junior, Intermediate, Senior and Advanced Physics, with laboratory.

LONDON UNIVERSITY

Matriculation. Junior Physics, either during the LENT, or else during the AUTUMN and SUMMER TERMS; Mechanics throughout the Session.

Preliminary Scientific M.B. and *Intermediate in Science.* Junior, and LENT TERM of Intermediate, Physics with practical work.

Intermediate Honours and *B.Sc.* Intermediate and Senior Physics, with three days a week Laboratory work.

B.Sc. Honours. Intermediate and Senior Physics, with three days a week Laboratory work.

D.Sc. In addition to Senior and Advanced Physics, students ought to continue reading the books recommended, and to work continuously in the Laboratory.

ELECTRICAL ENGINEERING

This course is designed to give a thorough knowledge of the principles involved in Electrical Engineering, and practical acquaintance with the use of apparatus, machines, and other appliances generally employed. It should be taken before the student enters an electrical engineering works or office.

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The course extends over a period of three years, and students are recommended to follow, as far as possible, the subjoined scheme of study which has been drawn up and approved by the Senate, as a course well adapted to the preliminary training of electrical engineers. College certificates are awarded to students who have satisfactorily passed through the complete course.

The curriculum for the first and second years is the same as that for Civil and Mechanical Engineering, with the exception of additional hours spent in the physical and electrotechnical laboratories.

In the third year a larger proportion of time is spent in the electrotechnical laboratory, and in attendance at lectures and classes on electrotechnics; the following table gives the hours in each subject during each of the three years.

COURSE IN ELECTRICAL ENGINEERING

FIRST YEAR.	Hours per week.	SECOND YEAR.	Hours per week.	THIRD YEAR.	Hours per week.
Pure Mathematics	3	Pure Mathematics	3	Pure Mathematics	3
Elementary Mechanics	3	App. Mathematics	3	Applied Mathematics	3
Junior Physics ...	4	Inter. Physics ..	3	Senior Physics ...	2
Chemistry; *Special Course*	3	Physical Laboratory	4	Electrotechnical Lectures	3
Physical Laboratory, *Special Course* ...	2	Electrotechnical Lectures	3	Electrotechnical Laboratory ...	8
		Electrotechnical Laboratory ...	4		
		Engineering... ...	3		
Engineering	4	Drawing and Design	3		
Machine Drawing...	3	Descriptive Geometry	3	Engineering	3
Descriptive Geometry	3	Eng. Workshop and Lab.	6	Engineering Design	3
Workshop	6			Engineering Lab. ...	6

Composition Fee for each year, £35.

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All students in electrical engineering should consult the Professor of engineering, as well as the Professor of physics, or the Lecturer on electrotechnics, before registering, and should obtain the separate prospectus of the engineering department as well as the general Syllabus of the College.

ELECTRO-TECHNOLOGY

Departmental Lecturer on Electrotechnics:
ALFRED HAY, B.Sc., M.I.E.E.
Laboratory Assistant: E. H. MORGAN.

There are three courses of lectures on Electrotechnics, one of them elementary enough to be attended by those who have been through the Junior Physics course, with its special course of laboratory practice (see p. 155) for a session, the other two more advanced and assuming that the student has attended the Intermediate Physics course as well.

(I) LECTURES

Junior Course

Monday, Friday, 2.0-3.0.

Suitable for second year engineering students.

AUTUMN TERM.—C.G.S. system of units. Practical units of current, quantity, E.M.F., resistance, power and energy, and their relation to the C.G.S. units. Conductors and insulators. Condensers; unit of capacity. Ohm's law and its applications. Measurement of E.M.F., current and resistance. Voltmeters, ammeters, ohmmeters, and wattmeters. Integrating ammeters and wattmeters. Winding and calibration of electrical measuring instruments. The magnetic circuit. Magnetomotive force and magnetic flux. Magnetic properties of iron. Hysteresis and its effects.

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LENT TERM.—Faraday's and Henry's experiments on electromagnetic induction. Conversion of mechanical into electrical energy. Lenz's law. Fleming's rule. Simple loop rotating in uniform magnetic field. Commutator. Development of the dynamo. Types of bipolar field-magnets and armatures. Details of construction. Armature reaction. Conditions for sparkless running. Winding of field-magnets. Characteristic curves. Efficiency and methods of testing. Analysis of losses. Continuous current motors. Counter E.M.F. and efficiency.

SUMMER TERM.—Secondary cells. Experiments of Planté. Faure's cell. Description of modern types. Chemical theories. Behaviour during charge and discharge. Effects of rest. Determination of resistance, capacity and efficiency. Arc lamps. Mechanism of modern types of arc lamps. Incandescent lamps. Photometry. Units of luminous intensity, flux, illumination and brightness. Comparison of methods of illumination.

Books recommended.—J. A. Fleming, *Magnets and Electric Currents*; J. A. Ewing, *Magnetic Induction in Iron and other Metals*; W. E. Ayrton, *Practical Electricity*; Hawkins and Wallis, *The Dynamo*; G. S. Ram, *The Incandescent Lamp*.

Problem Class

Thursday, 2.0-3.0.

In connection with the Junior course on Electrotechnics, a problem and exercise class will be held on the subjects of the lectures and laboratory work throughout the session.

Fee.—For Junior course (with problem class), One Term, £2; Two Terms, £3; Session, £4.

Intermediate Course

Monday, Thursday, 9.30-10.30.

AUTUMN TERM.—Multipolar Dynamos. Description of typical forms of field-magnets and armatures. Construction of large commutators. General principles

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of alternating currents. Alternators and transformers. Synchronous motors. Polyphase currents. Polyphase generators and induction motors. Electric lifts and cranes.

LENT TERM.—Systems of house wiring. Fittings, distributing and feeding mains. Fall of potential along mains. Arrangement of connections at central station. Methods of charging for electricity supply.

SUMMER TERM.—Electric traction. Types of traction motors. Car equipment. Controllers and brakes. Overhead trolley system. Conduit, third-rail, and surface-contact systems. Accumulator traction. Electric automobiles. Types of motors and controllers.

Fee.—For Intermediate course (with problem class), One Term, £2; Two Terms, £3; Session, £4.

Senior Course

Tuesday, Friday, 9.30-10.30.

AUTUMN TERM.—Dynamo design. Relation of size and speed to output. Usual proportions of Gramme and drum-wound armatures. Heating of armatures. Dynamos of special construction. Sayers' and Mordey's windings. Lap and wave windings. Alternating currents. Measurement of E.M.F., current and power. Frequency indicators and phase meters. Power factor. Behaviour of condensers on alternate current circuits. Uses of condensers.

LENT TERM.—Shapes of E.M.F. curves given by different types of alternators, and experimental methods of determining them. Form factor. Design of alternators and transformers. Relation of size to output and frequency. Effect of wave-shape. Alternate current arcs and arc lamps. The testing of alternators and transformers. Synchronous motors. Theory and design of polyphase generators and motors. Induction generators.

SUMMER TERM.—Central stations. Types of prime movers and generators. Law of economy. Load factor.

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Localization of faults in distributing networks. Electric welding. Applications of electricity to chemical manufacturing processes. Copper refining. Production of caustic alkalies, chlorine, chlorates, and metallic sodium. Aluminium. Metallic carbides and carborundum.

Books recommended.—Stewart A. Russell, *Electric Light Cables*; G. A. Kapp, *Transmission of power*; S. P. Thompson, *Dynamo Electric Machinery*; *Polyphase Electric Currents*; Hay, *Alternate Current Working*; Jackson, *Alternating Currents and Alternating Current Machinery*; Fleming, *Alternate Current Transformer*, parts i and ii; Kapp, *Dynamos, Alternators and Transformers*; Weekes, *Transformer Design*; E. Wilson, *Electric Traction*; Carus-Wilson, *Electrodynamics*.

Problem Class

Tuesday, 2.0-3.0.

A class will be held for the further investigation of problems arising in lectures, and for the working out of numerical examples.

Fee.—For Senior course (with problem class), One Term, £2; Two Terms, £3; Three Terms, £4.

Telegraphy and Telephony

A course of 10 lectures will be given in the AUTUMN TERM on Telegraphy and Telephony, on Saturdays, at an hour to suit the convenience of students.

Instruments, lines, code, batteries. Duplex, quadruplex and multiplex working, single and double current. Automatic transmitters. Effects of self induction and capacity. Speed of working. Cable construction, laying and repair. Finding of faults. Land lines, posts, insulators. Telephones: instruments, lines, exchanges, and networks. Conditions of efficiency. Disturbing influences. Mutual induction. Methods of protection. Effect of capacity and self induction. Wireless telegraphy.

Books recommended.—Preece and Sivewright, *Telegraphy*; Preece and Stubbs, *Manual of Telephony*; W. Hopkins, *Telephone Lines*.

Fee.—£1 10s.

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(II) LABORATORY WORK

The electrotechnical laboratory is fitted with a 25 H.P. steam-engine and boiler, several types of dynamo machines and motors, a large battery of storage cells, a single-phase alternator, a three-phase generator and induction motor, transformers, a variety of meters, galvanometers, and other instruments and appliances. It is open for the use of students on five days a week from 10.0-5.0. They are recommended to spend one day a week in it in their second year, and at least two days a week in their third year. It is also open to students wishing to stay a fourth year, to carry out research work in any special branch of the subject. The experimental work is based upon and illustrates the subject matter of the lectures, and includes testing of all kinds, the management of dynamos, accumulators, lamps, and other electrical plant, and investigations of the principles involved in electrical engineering.

Students will not be admitted to the electrotechnical laboratory unless they satisfy the Professor with their progress in Junior Physics, or give some other proof of sufficient knowledge.

The Fees for admission to the electrotechnical laboratory are as follows :—

	One Term.	Two Terms.	Session.
One day a week ...	£3	£4 10	£6
Two days a week ...	4	6 10	9
Three days a week ...	5	8 10	12
Five days a week ...	7	11 0	15

But a composition fee has been arranged, covering the whole course needed by an electrical engineering student, viz., £35 each year. For further details, see pp. 159, 160.

Evening Lectures

See Evening Syllabus.

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ENGINEERING

Chair founded by Mr. Thomas Harrison, 1886

Professor : H. S. HELE-SHAW, LL.D., F.R.S., M.Inst.C.E.

Assistant Lecturers :
J. W. ANDERSON, Assoc.M.Inst.C.E., M.I.Mech.E.,
E. BROWN, M.Sc.

Lecture-Assistant : J. OKILL.

Workshop Demonstrator and Mechanic : W. DONALDSON.

Wood-Working Instructor : R. GARNER.

(All Engineering Students should apply for the separate Engineering Syllabus, which contains further time tables, plans of laboratory, and useful information regarding Whitworth scholarships and other matters of professional interest.)

The department provides instruction for those intending to become engineers, or to enter any of the allied professions, and supplements the ordinary professional training by systematic technical teaching. The engineering portion of this instruction is given in the Walker Engineering Laboratories, which contain, in addition to the extensive drawing hall, lecture hall, museum, and class rooms, a large laboratory and workshop, containing various engines, machine tools, and testing machines, thus enabling students to combine practical and theoretical training. There is also a wood-working department in which, after a preliminary course of instruction, students are taught pattern-making. Such training must only be regarded as either preliminary to, or supplementary of, a pupilage under some engineer, or course of apprenticeship with some engineering firm ; but those engineers or firms who are in communication with the College are willing to take

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into consideration time spent in the College engineering department as rendering a shorter period of pupilage or apprenticeship necessary. Engineering students should, prior to registering, see the Professor of Engineering, who will be in his room on the morning of Wednesday, October 3.

Although there are several branches of the profession, every engineer requires much the same general preliminary training in mathematics, chemistry, physical science, and a knowledge of drawing, the theory of structures and machines, and of the strength and properties of materials, and the use of machines and machine tools. Therefore the scheme of instruction is arranged in lectures, classes, laboratory and workshop practice for the first two years, to a great extent the same, whatever branch a student may elect to follow.

During the third year, it is intended that students shall specialize in some particular branch, either at the College or in an engineering works.

Courses of instruction in the third year are at present provided in—

(1) Civil engineering.
(2) Mechanical engineering.
(3) Electrical engineering.

Information and Time Tables are given under the above heads, since slight differences exist in each case; but there is a uniform *Composition Fee* of £35 in all three courses, and for each year of the course, in the third year as well as in the first two years.

There will be a summer vacation course in workshop practice, see p. 172.

It must also be borne in mind that other subjects not mentioned in the detailed scheme may with great advantage be taken, particularly French and German. There are also evening lectures and classes upon special engineering subjects which may be attended by engineering students.

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VICTORIA UNIVERSITY DEGREES

Independently of these courses, the engineering lectures and classes are arranged to meet the requirements of Victoria University for both Honour and Ordinary degrees in Engineering, and to afford the necessary instruction to those proceeding to such degrees. The attendance requirements for an Honours degree are as follows:—(1) Engineering, for 3 hours weekly during the first year, and 4 hours during the second and third, together with 7 hours weekly of practical work; (2) Pure Mathematics and Applied Mathematics, each for 3 hours weekly during the first two years, and either Pure or Applied during the third year; (3) Chemistry, 2 hours weekly for 1 year; (4) Physics or Geology, 3 hours weekly for 1 year; For details and subjects, see the Victoria University Calendar, pp. 132, 133. For scheme of examination for Ordinary Engineering Degrees, see p. 50.

INSTITUTION OF CIVIL ENGINEERS

It is important to bear in mind that now, in order to become either a Student or Member of the Institution of Civil Engineers, there are compulsory examinations. College lectures cover all the subjects of these examinations. The Institution, however, accepts the Preliminary examination of Victoria University, in lieu of its own examination for Studentship, and a pass in the Honours School of Engineering in lieu of that for Membership.

WILLIAM RATHBONE MEDAL

Each year the student who after a three years' course has most distinguished himself in engineering work will be awarded the WILLIAM RATHBONE MEDAL, which has been instituted to commemorate the part taken by WILLIAM RATHBONE, Esq., LL.D., in the establishment of the Engineering Department.

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WILLIAM RATHBONE PRIZES

There will further be prizes under the above title awarded annually in connection with the drawings exhibited on the occasion of the prize distribution and annual gathering of friends at the end of the Summer Term. The prizes will be as follows :—

A first and a second prize will be awarded for the best sets of worked drawings in Course A.

A first and a second prize will, in the same manner, be awarded for students in Course B.

A first prize will be awarded for the best set of designs for students in Course C.

Special certificates will also be awarded for this work.

COLLEGE CERTIFICATES IN ENGINEERING

The College awards certificates in Engineering to students who have passed through a complete course in civil, mechanical, or electrical engineering, consisting of at least three years in the case of mechanical and electrical engineering, and two years in the case of civil engineering.

A class certificate is given to every student placed in the first class in the terminal examinations in engineering subjects. A general class certificate may be obtained by students stating the details of all their terminal examination results in engineering subjects during the time spent at the College.

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CIVIL ENGINEERING

This course is intended to meet the generally acknowledged want of a preparatory training before the usual entry as articled pupil into an office. The co-operation of the leading Civil Engineers in the neighbourhood has been secured, so that the time spent at the College may be recognized by them in receiving pupils. Such pupils, after passing through a satisfactory course at the College, will be received on more favourable terms than otherwise. In the case of several engineers a clause is allowed in the articles enabling the pupil to attend advanced or special day lectures at the College during the first or second years of pupilage.

The course of civil engineering extends over three years, and the details of the lectures and classes are given in the annexed time tables.

TIME TABLE

First Year Course

CLASSES	DAY AND HOUR						TERM. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. First Year ..	10.30	..	..	..	10.30	9.0	A. L. S.
Problem Class	..	..	10.30	..	..	..	A. L.
Drawing and Design, A { Lecture	2.0	..	..	..	..	..	A. L.
Drawing and Design, A { Class ..	..	..	..	3-5	..	..	A. L.
„ ..	..	..	..	2-5	..	..	S.
Descriptive Geometry { Lecture	..	..	..	2-0	..	..	A. L.
Descriptive Geometry { Class ..	..	2-4	..	..	..	..	A. L.
Graphic Statics	..	2-4	..	..	..	..	S.
Workshop	..	9-11.30	..	9-11.30	2-5	11-1	A. L. S.
Pure Mathematics .. {	9.30 or 11.30	..	9.30 or 11.30	..	9.30 or 11.30	..	A. L. S.
Elementary Mechanics	..	11.30	..	11.30	..	10.0	A. L. S.
Physics, Junior	4.0	12.30	..	12.30	..	..	A. L. S.
Chemistry, Special Course ..	..	..	9.30	..	9.30	..	A. L.
„ Practical (1)	..	4.0	..	..	..	..	A. L.

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Second Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. Second Year ..	..	10.30	..	10.30	..	10.0	A. L. S.
Problem Class	..	11-30	..	..	..	..	A. L. S.
Drawing and { Lecture	12.30	..	..	..	..	..	A. L.
Design, B { Class	3-5	..	..	..	..	..	A. L. S.
Descriptive Geometry	..	2-4	..	..	12.30	..	A. L.
Surveying, Elementary	12.30	2-5	..	..	..	..	S.
Engineering Laboratory	..	..	..	11.30 *or*	10.30	..	A. L. S.
Workshop, Metal	..	..	..	11.30	10.30	..	A. L. S.
„ Wood	..	..	..	11.30	..	..	A. L. S.
Mathematics, Pure Int.	9.30	..	9.30	..	9.30	..	A. L. S.
„ Applied, Int. ..	..	9.30	..	9.30	..	9.0	A. L. S.
Physics, Intermediate	..	4.0	12.30	4.0	..	..	A. L. S.
Physical Laboratory	..	..	..	..	3-5	..	A. L. S.
Electrotechnical Laboratory ..	10.30	..	..	..	..	..	A. L. S.
Electrotechnics, Junior	2.0	..	..	2.0	2.0	..	A. L. S.
Metallurgy, Elementary	..	..	11.30	..	..	..	A. L. S.

Third Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. Third Year ..	11.30	..	11.30	..	11.30	..	A. L. S.
Problem Class	..	..	9.30	..	..	..	A. L. S.
Engineering, Drawing and Design	..	..	..	..	2-5	..	A. L. S.
Higher Descriptive Geometry and Graphic Statics	..	..	..	..	9.30	..	A. L.
Surveying	2-5	..	..	..	9.30	..	S.
Laboratory	..	..	2-5	..	..	..	A. L. S.
Mathematics, Pure	10.30	..	10.30	..	10.30	..	A. L. S.
„ Applied	..	11.30	..	11.30	..	11.0	A. L. S.
Physics, Senior	12.30	..	..	..	12.30	..	A. L. S.
Intermediate Electrotechnics ..	9.30	2.0	..	9.30	..	..	A. L. S.
Electrotechnical Laboratory ..	..	3-5	..	..	..	..	A. L. S.

Composition Fee for each year, £35.

For details of engineering courses and separate fees, see pp. 161-171.

Students attending these courses are eligible for election as Students of the Institution of Civil Engineers, and may then compete for the Miller scholarship offered annually (value £40 per annum, tenable for three years), as also for the Miller prizes awarded for papers read at the Students' meetings.

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MECHANICAL ENGINEERING

The course in mechanical engineering is, like the course in civil engineering, arranged so as to enable a student to spend three complete sessions at the College, including vacation courses of workshop instruction, and the complete scheme is recommended by the Senate. The course in mechanical engineering covers the theoretical portion of the work required for the Whitworth scholarships and exhibitions, particulars of which are given in the separate Engineering Syllabus.

For students who wish to take the complete course for the first two years, and to spend only the winter session at the College during the third year, taking the remaining six months in an engineering works, a special *Composition Fee* is arranged.

TIME TABLE

First Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. First Year ..	10.30	..	..	..	10.30	9.0	A. L. S.
Problem Class	..	..	10.30	..	..	..	A. L.
Drawing and Design, A { Lecture ..	2.0	..	..	..	..	..	A. L.
Drawing and Design, A { Class ..	..	..	..	3-5	..	..	A. L. S.
Drawing and Design, A { „ ..	..	..	..	2-5	..	..	S.
Descriptive Geometry { Lecture ..	..	..	..	2.0	..	..	A. L.
Descriptive Geometry { Class ..	..	2-4	..	..	..	..	A. L.
Graphic Statics	..	2-4	..	..	..	..	S.
Workshop	..	9-11.30	..	9-11.30	2-5	11-1	A. L. S.
Pure Mathematics .. {	9.30 or 11.30	..	9.30 or 11.30	..	9.30 or 11.30	..	A. L. S.
Elementary Mechanics	..	11.30	..	11.30	..	10.0	A. L. S.
Physics, Junior	4.0	12.30	..	12.30	..	..	A. L. S.
Chemistry, Special Course ..	..	..	9.30	..	9.30	..	A. L.
„ Practical (1)	..	4.0	..	..	..	..	A. L.

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Second Year Course

Classes	Day and Hour						Term Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. Second Year. ..	..	10.30	..	10.30	..	10.0	A. L. S.
Problem Class	..	11.30	..	..	..	..	A. L. S.
Drawing and Design, B { Lecture	12.30	..	..	..	..	..	A. L.
Design, B { Class	3-5	..	..	..	..	..	A. L. S.
Descriptive Geometry	..	2-4	..	..	12.30	..	A. L.
Engineering Laboratory	..	..	..	11.30 *or*	10.30	..	A. L. S.
Workshop, Metal	..	..	..	11.30, 2.0 *or*	10.30	..	A. L. S.
„ Wood	..	..	..	11.30	..	..	A. L. S.
Mathematics, Pure Int.	9.30	..	9.30	..	9.30	..	A. L. S.
„ Applied Int. ..	..	9.30	..	9.30	..	10.0	A. L. S.
Physics, Intermediate	..	4.0	12.30	4.0	..	..	A. L. S.
Physical Laboratory	10.30	..	..	..	..	..	A. L. S.
Electrotechnical Laboratory ..	..	..	..	..	3-5	..	A. L. S.
Electrotechnics, Junior	2.0	..	..	2.0	2.0	..	A. L. S.
Metallurgy, Elementary	..	..	11.30	..	..	..	A. L. S.

Third Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. Third Year ..	11.30	..	11.30	..	11.30	..	A. L. S.
Problem Class	..	..	9.30	..	..	..	A. L. S.
Drawing and Design	..	..	..	..	2-5	..	A. L. S.
Higher Descriptive Geometry and Graphic Statics	..	..	..	..	9.30	..	A. L.
Laboratory	..	..	2-5	..	..	..	A. L. S.
Workshop	..	10.30	..	2-5	..	..	A. L. S.
Mathematics, Pure	10.30	..	10.30	..	10.30	..	A. L. S.
„ Applied	..	11.30	..	11.30	..	11.0	A. L. S.
Physics, Senior	12.30	..	..	..	12.30	..	A. L. S.
Intermediate Electrotechnics ..	9.30	2.0	..	9.30	..	..	A. L. S.
Electrotechnical Laboratory ..	..	2-5	..	..	..	..	A. L. S.

Composition Fee for each year, £35; for Winter Course of Third Year, £24.

For details of engineering courses and separate fees, see pp. 161-171.

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ELECTRICAL ENGINEERING

Students proposing to become Electrical Engineers are recommended to take, during the first and second years, very much the same courses as arranged for Civil and Mechanical Engineers. The only difference in the first year course is the substitution of two hours in the Physics Laboratory on Tuesday morning from 9.30 to 11.30, in place of the two hours in the Wood-working Department. The complete courses for the second and third years are given below, and it will be seen that an increased amount of time is taken in the Physical and Electrotechnical Laboratories. During the third year, in addition to a much greater amount of time in the Electrotechnical Laboratory, additional courses of lectures and classes in Electrotechnics are provided. All Electrical Engineering students should consult the Professor of Physics, or the Lecturer on Electrotechnics, as well as the Professor of Engineering, prior to registration.

ELECTRICAL ENGINEERING. *First Year Course*, with the addition of Physical Laboratory Course on Tuesdays in the Lent and Summer Terms. See p. 143.

Second Year Course

CLASSES	DAY AND HOUR						TERM. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. Second Year ..	..	10.30	..	10.30	..	9.0	A.L.S.
Problem Class	..	11.30	..	..	..	..	A.L.S.
Drawing and Design, Course B { Class ..	3-5	..	..	..	..	..	A.L.S.
Drawing and Design, Course B { Lecture ..	12.30	..	..	..	..	..	A.L.
Descriptive Geometry	..	2-4	..	..	1.30	..	A.L.
Engineering Laboratory and Workshop	..	..	..	11.30 *or* 10.30		..	A.L.S.
Mathematics, Pure	9.30	..	9.30	..	9.30	..	A.L.S.
„ Applied	..	9.30	..	9.30	..	9.0	A.L.S.
Physics, Intermediate	..	4.0	12.30	4.0	..	..	A.L.S.
Electrotechnics	2.0	2.0	..	..	2.0	..	A.L.S.
Physical Laboratory	10.30	..	..	..	3-5	..	A.L.S.
Electrotechnical Laboratory ..	..	11.30	..	11.30	..	..	A.L.S.
Metallurgy, Elementary	..	..	11.30	..	..	..	A.L.S.

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Third Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Engineering. Third Year ..	11.30	..	11.30	..	11.30	..	A.L.S.
Problem Class	..	..	9.30	..	..	..	A.L.S.
Drawing and Design	..	..	..	..	2-5	..	A.L.S.
Engineering Laboratory	..	..	2-5	..	..	..	A.L.S.
Mathematics, Pure	10.30	..	10.30	..	10.30	..	A.L.S.
„ Applied	..	11.30	..	11.30	..	11.0	
Physics, Senior	12.30	..	..	..	12.30	..	A.L.S.
Electrotechnics	9.30	9.30-2.0	..	9.30	9.30	..	A.L.S.
Electrotechnical Laboratory ..	2-4	2-5	2-5	..	..	..	A.L.S.

Composition fee for each year, £35.

For details of Electrotechnical classes, see pp. 146-150.

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DETAILED SYLLABUS OF ENGINEERING LECTURES AND CLASSES

ENGINEERING

The Engineering Lectures will be supplemented by problem and question papers, and by occasional examinations.

First Year

(A) Monday, Friday, 10.30-11.30;

(B) Saturday, 9.0-10.0.

The course is suitable for the Intermediate B.Sc., or for Honours Engineering (first year).

AUTUMN TERM.—(A) The nature of the profession of engineering and the character of the scientific and practical training necessary for an engineer. The materials employed for engineering purposes, their classification, properties, strength and preservation. The sources of energy in nature. The relative values of muscular effort, fuel, wind, rainfall and tides for motive power. Machines for utilizing the muscular power of men and animals. History of the development of the steam-engine. Windmills. Description of methods for storing and supplying water for power purposes, such as by the use of rivers and waterfalls. Measurements and units employed for engineering purposes. Drawing and sketching. The nature and use of graphic methods. The elementary laws of mechanics and their application in engineering work and contrivances. The nature and laws of friction. Friction on journals, pivots, and thrust bearings. Problems on machines in which friction is considered. Contrivances for reducing the effect of friction, and contrivances such

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as brakes, friction clutches, friction gear, etc., for its useful application. Friction of ropes and belts. Classification and theory of elementary structures. The nature and properties of air as employed for engineering purposes. The diving-bell and caisson for sinking foundations. The use of compressed air and the laws of the transmission of work by its means.

(B) *Machine Tools and Workshop Appliances.* Nature and action of cutting tools. Tool steel, method of working, hardening and tempering. Machine tools. Lathes, planing, shaping, slotting, drilling, and milling machines. Woodworking machinery. Files, their manufacture, classification and use. The production of plane surfaces and lining-out work. Measuring instruments, including the use of the vernier, micrometer, caliper, gauges, etc.

LENT TERM.—(A). *Elements of Hydro-Mechanics.* Pressure on quay walls, dock gates, and embankments. Theory of the steady motion of fluids. Velocity of fluids due to head, frictional resistances and loss of head. Discharge from large and small orifices. Viscosity and surface friction. Flow in open channels and loss of velocity by eddies. Stability and resistance of ships. Hydraulic motors, water wheels, and turbines.

(B) *Machines for utilizing Water and Air Pressure to Transmit Power.* General outline of hydraulic machines. Hydraulic pipes. Bramah's press. The accumulator. Cranes. Machine tools, such as riveters, flangers, &c., hoists, buffers, various hydraulic machines.

Compressed Air. Its advantages and disadvantages for transmitting power. Air compressors. Railway brakes. Cold air machines. Pneumatic riveters.

Water Supply and Distribution. Sanitary Engineering. Supply of water to towns. Reservoirs. Rain, spring, well, and river water. Pumps. Mode of distributing water supply. Draining of lands and towns. Reclamation and irrigation of lands.

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SUMMER TERM.—(A) *Civil and Constructive Engineering.* Preservation of timber. Artificial stones and hydraulic cements. Brickwork. Masonry. The stability of walls and buttresses. Substructures and foundations. Coffer dams. Common roads: material, construction, maintenance, and draining. Stone, wood, and asphalt pavement. Road locomotion by horse traction and by mechanical means. Railways. Different kinds of rails, their wear and cost. Switches and crossings. Signals, mechanical and electrical. Electrical railways. The elements of bridge construction. Tunnels and embankments. Tramways, the different systems of horse and steam, wire-rope, and electrical traction. Classification of canals. Streams and rivers. Gauging and measuring of velocity at different cross sections. Floods. Different kinds of facings for banks. Construction of dams and weirs. Marine engineering. Sea defences and embankments. Breakwaters. Piers. Harbours. Docks.

(B) *Machinery used on Civil Engineering Work.* Spoon, grab, continuous bucket, suction, and hopper dredgers. Hopper barges, subaqueous rock-breaking machines. Steam navvies. Piles. Pile-drivers, and appliances used in pile-driving. Boring outfits for artesian and other wells. Boring shields. Percussion and rotary boring machines, and mechanical apparatus for tunnel-driving.

Fee.—One Term, £2; Two Terms, £3; Course, £4.

PROBLEM CLASS

AUTUMN and LENT TERMS.—Wednesday, 10.30-11.30.

In connection with the first year engineering course a problem class will be held, at which all students of the course will be expected to attend, unless expressly excused by the Professor.

Fee.—£1 the course.

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Second Year

Lectures—Tuesday, Thursday, 10.30-11.30.
Saturday, 10.0-11.0.

Problem Class, Tuesday, 11.30-12.30.

This course is suitable for the Final B.Sc., or for Honours Engineering (second year).

AUTUMN TERM.—(A) *Theory of Machines and Mechanism.* History of the subject. Pairs of elements. Kinematic links and chains. Force and pair closure. Higher pairs of elements. Formulas of the simple machines and of various mechanisms. The velocity and relative motion of various parts of a machine, and the construction of diagrams of relative position and velocity for various mechanisms. The theory of machines illustrated by examples in parallel and straight line motions. Sewing machines. Printing and engraving machines. Shearing machines. Power looms and spinning machinery. Reversing and quick return motions. The mechanism and mechanical contrivances of the steam-engine and other prime movers. Chamber crank trains and chamber wheel trains. Valve motions of various kinds. The theory of toothed wheels. Bevil and screw gearing. Problems upon higher pairing, including determination of form of teeth for wheels and form of screw gearing, cams, ratchets, and mechanism in general. Wheels in trains. Epicyclic trains, the transmission of motion by belt and rope gearing. Differential screw and pulley. Apparatus for measuring and for regulating the rates of motion, such as escapements of clocks and watches, and governors.

LENT TERM.—*The Steam Engine.* Inventions of Savery, Newcomen, and Watt. Nature and properties of steam. Steam boilers and methods of effecting economical combustion. Expansion and behaviour of steam in the cylinder. Indicators and indicator diagrams. The pulsometer and injector. Valves, valve gears, and valve diagrams.

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Hot Air Engines. The inventions of Stirling and Ericsson. Their advantages and disadvantages.

Gas and Oil Engines. Historical outline. Causes of early failure and modern improvements.

SUMMER TERM.—A course of lectures upon Graphic Statics and the elements of Construction will be given. An outline of the course is as follows :—

Graphical determination of bending moments and shearing forces in beams and cantilevers with various systems of loading. General theory of Graphic Statics and its application to roofs. Effect of wind pressure. Large iron roofs and girders. Stresses in braced structures. Plate web girders, suspension bridges and structures in masonry.

Fee.—One Term, £2; Two Terms, £3; Course, £4. Problem Class, £1.

Third Year

Monday, Wednesday, Friday, 11.30-12.30; Problem Class, Wednesday, 9.30-10.30.

This course is necessary for Honours Engineering (third year).

AUTUMN TERM.—A course of lectures will be delivered upon the theory of the steam-engine and other prime movers as follows :—The general principles of thermodynamics. Calculation of internal and external energy, and thermal efficiency. Properties of steam and permanent gases, and expression of laws which they obey. Theory of heat engine working with a perfect gas. Perfect steam-engines. Calculation of the density of steam. Graphical method of ascertaining internal work in expanding steam. Various sources of loss, and effect of clearance and wire drawing. Action of the sides of the cylinder walls and steam jacketing. Entropy-temperature diagrams. Theory of refrigerating machines. Transmission of power by compressed air. Theory of gas engines.

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LENT TERM.—(A) Theory and practice of hydro-mechanics, including flow of water in pipes, over weirs, and through sluices, the theory of hydraulic brakes, water-wheels, and turbines. The application of the high-pressure system to the transmission of power.

(B) A course of lectures will also be delivered upon the dynamics of machines as follows:—The dynamics of the steam-engine, and curves of crank effort. Fluctuation of energy and speed, and calculations connected with governors and fly-wheels. Efficiency of machines. Straining actions in machines and balancing of various parts.

SUMMER TERM.—The course of lectures will include the following subjects:—Theory of beams, including deflection of beams and Clapeyron's theorem of three moments. Compound stresses. The ellipse of stress and its applications. Vibration of structures. Strength of thick cylinders. Transmission of power by belts. Centrifugal tension and slip of belts. Calculations for open and crossed belts. Long struts. Counterbracing of girders.

Text-Books.—Ewing, *Steam Engine*; Holmes, *Steam Engine*; Kennedy, *Mechanics of Machinery*; Reauleux, *Kinematics of Machinery*; Goodeve, *Elements of Mechanism*; Robinson, *Gas and Petroleum Engines*; Claxton Fidler, *Bridge Construction*; Bovey, *Theory of Structures*; Goodman, *Mechanics Applied to Engineering*; Ewing, *Strength of Materials*.

Fee.—One Term, £2; Two Terms, £3; Course, £4; Problem Class, £1.

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ENGINEERING, DRAWING, AND DESIGN

First Year—Course A

Lecture, AUTUMN and LENT, Monday, 2.0-3.0.

Class, AUTUMN and LENT, Thursday, 3.0-5.0;
SUMMER, Thursday, 2.0-5.0.

Suitable for the Intermediate B.Sc. and for Honours Engineering (first year).

Lectures will be given on Drawing, the strength and properties of materials, and the elements of design as follows:—The materials used in construction, iron, steel, copper, tin, lead, alloys, timber, stones, bricks, and cements. Stress, strain, their relation with respect to elastic materials. The testing of materials. The dimensions and strength of bolts, nuts, keys, and cotters. Rivets and riveted joints. The strength and construction of pipes and cylinders. Simple beams. In the class, instruction will be given in the preparation of working and finished drawings.

Text-Book.—Unwin, *Elements of Machine Design.*

Second Year—Course B

Lecture, AUTUMN and LENT, Monday, 12.30-1.30.

Class, AUTUMN, LENT, and SUMMER, Monday, 3.0-5.0.

This course is required for the Final of the B.Sc., and also for Honours candidates in their second year, and will deal with the following subjects:—

AUTUMN TERM.—Strength of materials. Stress and strain. The testing of materials. Their behaviour under test. Influence of the form of the test piece. Researches of Wöhler and Bauschinger and formulæ based upon their work. Riveted joints. The strength of beams.

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LENT TERM.—The strength of shafts. Combined bending and twisting. The theory and calculations required in the design of essential parts of machinery such as cranks, connecting rods, etc. The theory of lubrication and its application to the design of engine details. The design of spur-wheels and fly-wheels.

Third Year—Course C

Friday, 2.0-5.0.

The lectures are required for the third year of Victoria Honours course, and will deal with the design of complete machines and structures, such as steam-engines, turbines, centrifugal pumps, jib and travelling cranes, sheer legs, boilers, retaining walls and dams, girders, masonry and brick arches, roofs.

Students will be expected to prepare and complete several sets of designs in connection with certain of the foregoing subjects, and for the College Diploma to present at least one such completed set of designs, in the preparation of which the use of text books will be allowed, but no other assistance.

A distinction will be made in the work done by students in civil engineering and in mechanical engineering; and if found desirable a special course of lectures will be given for each branch.

No terminal certificate in connection with the examination will be awarded to a student in either of the foregoing courses who does not present a satisfactory number of drawings at the end of the term, and these will be retained until after the annual exhibition of work in June.

Fee for each of the foregoing courses—One Term, £2; Two Terms, £3; Three Terms, £4.

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DESCRIPTIVE GEOMETRY

Elementary

AUTUMN AND LENT TERMS

Lecture, Thursday, 2.0-3.0. Class, Tuesday, 2.0-4.0.

AUTUMN TERM.—*Solid Geometry.* Projection. Dihedral angles. Projection of solids. Sections of solids. *Plane Geometry.* Construction and use of scales. The use of squared paper. Construction of the ellipse.

LENT TERM.—*Descriptive Geometry.* The representation of points and lines in space. Representations of oblique planes. Intersection of lines and planes. Representations of plane figures on oblique planes. Method of obtaining true shape of same.

Text-Books.—Angel, *Practical Plane and Solid Geometry*; Millar, *Descriptive Geometry.*

Fee.—One Term, £2; Course, £3.

Advanced

AUTUMN AND LENT TERMS

Lecture, Friday, 12.30-1.30. Class, Tuesday, 2.0-4.0.

AUTUMN TERM.—*Plane Geometry.* The ellipse, parabola, and hyperbola. Construction of spiral and rolling curves. Design of cams to give required motions. Point paths in mechanisms. Radial and other valve gears.

LENT TERM.—*Solid Geometry.* Advanced problems on points, lines, and oblique planes. Intersection of lines with planes, and of planes with one another. Representation of solids in any position. Intersection of solids and the development of their surfaces. Isometric projection. Theory of perspective or radial projection. Shadows.

Text-Books.—Millar, *Descriptive Geometry*; Eagles, *Constructive Geometry of Plane Curves.*

Fee.—One Term, £2; Course, £3.

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Higher

AUTUMN AND LENT TERMS

Lecture and Class, Friday, 9.30-10.30.

This course will be divided into two parts:—(1) Examples of the use of conic sections and of other planes such as the cycloid and spiral curves in engineering problems. (2) Examples in descriptive geometry by orthography, isometric and perspective projection of cases required for engineering work.

This course is specially arranged for Honours students for their third year, and each week a set of problems is given out which every student is expected to work through.

Fee.—One Term, £1; Course, £1 10s.

GRAPHIC STATICS

First Year Course

SUMMER TERM. Tuesdays, 2.0-4.0.

A course of lectures, together with practical work in the Drawing Hall, will be given in this subject.

Representation of magnitudes and quantities, conditions for equilibrium of any number of forces in one plane, parallelogram, triangle and polygon of forces, reciprocal figures, Bows' or Henrici's notation, funicular polygon, moments, couples, simple bending moment and shearing force diagrams, framed structures.

Fee.—Course, £1.

SURVEYING

SUMMER TERM

Lecture, Monday, 12.30-1.30. Class, Tuesday, 2.0-5.0.

The course is prescribed for Victoria students in the final year of their Ordinary, or in the second year of their Honours course.

Tuesday afternoon will be devoted to practical instruction in the use of surveying and levelling instruments, the keeping of field books, the demarcation of survey points,

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and to *Field Practice* in the neighbourhood, actual surveys being made and plotted.

The lecture on Monday afternoon will deal with the principles of surveying and levelling, including a discussion of the various methods of surveying with chain, telemeter, plane table, compass sextant, and theodolite; levelling operations, and contouring, and the sources of error in levelling.

Fee.—£3.

Advanced Course

SUMMER TERM

Lecture, Friday, 9.30-10.30. Class, Monday, 2.0-5.0.
Fee.—£3.

STRUCTURE AND DISEASES OF TIMBER

This special course of lectures will be delivered during the LENT TERM by Professor HARVEY GIBSON (Professor of Botany), and is recommended for third year students.

Fee for the course, 15s.

LABORATORY AND WORKSHOP

Instruction in the workshop and laboratory is arranged according to a progressive scheme to suit the requirements of the three years' course of engineering study.

In the first year, students spend four hours in the wood-working department, and before proceeding to actual pattern-making, are required to do, satisfactorily, a certain number of exercises at the bench and lathe. Seven hours a week are spent in the main workshop at the vice, lathe, and other tools, the object in view being to impart an acquaintance with the use of tools and some idea of working to a drawing.

Students in the second year are required to spend one afternoon at pattern making, two mornings in the main workshop, and one morning in the testing department.

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They are allowed to prepare test pieces, and experimental apparatus for their own use. Students in mechanical engineering (second year) take a special course of workshop practice, instead of surveying during the Summer Term.

Students in the third year go through a series of steam engine trials on the experimental steam engine, gas engines, and other motors, in the laboratory, thoroughly working out all results. A course of experiments on hydraulics and lubricants is arranged, and also a further course of the testing of materials. The testing machines and workshops are available for carrying out experimental research.

A register of attendance is kept, and leave of absence required, as in the case of lectures.

TABLE OF FEES

	One Term.	Two Terms.	Three Terms.
Year I ...	£4 ...	£6 ...	£8
Year II ...	5 ...	7 ...	9
Year III ...	6 ...	8 ...	10

For second and third year electrical engineering students there is a reduction of £1 each Term.

For laboratory or workshop students not taking a regular engineering course, the following is the scale of fees :--

	One Term.	Two Terms.	Session.
One day per week ...	£4 ...	£5 ...	£6
Two days „ ...	5 ...	7 ...	9
Three days „ ...	6 ...	8 ...	10
Five days „ ...	7 ...	9 ...	12

NOTE.—*A working day consists of six hours.*

There is a summer vacation class, lasting for about two months, for students who desire to work during the whole day in the workshop.

Fee.—£8.

Special arrangements will be made in the case of exceptional students wishing to work in the laboratory.

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THE FEES FOR THE COMPLEMENTARY COURSES ARE:—

	One Term.	Two Terms.	Course.
Mathematics	£2	£3	£4
Mechanics	2	3	4
Physics, 1st year	3	4 15	6
„ 2nd or 3rd year	2	3	4
Chemistry, special	—	—	2 10
Practical course	—	—	1 10

For details of laboratory fees for Physics and Chemistry, see pp. 150, 188.

Evening Lectures

For evening lectures and courses of laboratory instruction, see special Engineering or Evening Syllabus.

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CHEMISTRY

Chair founded by Mrs. Grant, of Rock Ferry, 1881

Professor : J. CAMPBELL BROWN, D.Sc.

Dep. Lecturer on Organic Chemistry : C. A. KOHN, M.Sc., Ph.D.

Dep. Lecturer on Metallurgy : T. L. BAILEY, Ph.D.

Demonstrators and Assistant Lecturers :
T. L. BAILEY, Ph.D.
W. B. DAVIDSON, M.A., D.Sc., Ph.D.
C. A. KOHN, M.Sc., Ph.D.
A. W. TITHERLEY, M.Sc., Ph.D.

Assistant : H. H. FROYSELL.

At the chemical laboratories complete facilities are provided for acquiring a practical acquaintance with chemistry in its highest scientific and special technical branches, as well as for securing a thorough training in the elements and principles of the science. The William Gossage laboratory, together with lecture rooms, gas analysis room, electrotechnical room and stores, have recently been erected, while the metallurgical laboratory and Professor's laboratory for research have been enlarged.

The classes meet the requirements of candidates for all stages of the ordinary B.Sc. degree, for chemistry Honours, or for the M.Sc. and D.Sc. degrees in Victoria University ; for degrees in medicine of Victoria, London, and Edinburgh ; for a special technological certificate of University College ; and for those studying chemistry as a preparation for professional, technical, or commercial life.

The classes also qualify for the Fellowship of the

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Institute of Chemistry of Great Britain and Ireland, and for other examining boards.

Students requiring special courses, or desirous of training themselves as professional chemists, should consult the Professor of chemistry before finally selecting and registering themselves for College courses. The Professor will be at the laboratories and prepared to see students on the mornings of October 2 and 3.

(1.) LECTURE COURSES

Elementary

General Course on the Principal Non-metallic Elements and the most important Metals, the Principles of Chemical Philosophy, and an introductory sketch of Organic Chemistry

Monday, Tuesday, Thursday, Friday, 3.0-4.0.

Properties of matter. The laws of chemical combination. Atomic theory. Description of the preparation and properties of the ordinary non-metallic elements and some of the more important metals and their compounds. Technical processes for the manufacture of the most important non-metallic compounds. Outlines of chemical philosophy, classification of the elements. Application of physics to chemistry. Cyanogen and its compounds; hydrocyanic acid; urea. Ultimate analysis of organic compounds, calculation of empirical formulæ, determination of vapour density.

The composition, properties, and relations of examples of the principal types of carbon compounds. Classification; definitions; homologous and analogous series; isomerism. Aliphatic series of compounds. Aromatic series; benzene; toluene; phenol; aniline; benzoic aldehyde; amygdalin; benzoic and salicylic acids.

Students are required to work the written exercises prescribed, and to attend the periodical class examinations.

Students attending this class are recommended to make some of the preparations, and perform some of the

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experiments for themselves after lecture; for this purpose practical class No. 1 has been provided, see p. 181.

Text-Books.—Bailey, *Tutorial Chemistry*, vols. i and ii; Richter, *Inorganic Chemistry*; Perkin and Kipping, *Organic Chemistry*; or Remsen, *Organic Chemistry*; Tilden, *Introduction to Chemical Philosophy.*

Books of Reference.—Roscoe and Schorlemmer, *Treatise on Chemistry*; Miller, *Elements of Chemistry*; Tilden, *Manual of Chemistry*; Graham-Otto, *Anorganische Chemie.*

Fee.—One Term, £2; Two Terms, £3; Course, £4.

Special Elementary

Wednesday, Friday, 9.30.

AUTUMN AND LENT TERMS.—A special short course will be provided to meet the requirements of engineering and electrotechnical students, for whom also a practical class is provided. This course will not satisfy University requirements (except in some cases for the Preliminary).

Students preparing for Victoria University Honours in engineering must attend two terms of the afternoon elementary class; these and any engineering students who find the hours of the special course inconvenient attend on Monday, Tuesday, and Friday, at 3.0, from October to the end of February, in lieu of the special course.

Engineering students who have an acquaintance with elementary chemistry may attend the F metallurgy class in place of the elementary class.

Fee.—One Term, £1 10s.; Course, £2 10s.

COURSE A

Non-Metals

Tuesday, Thursday, 11.30-12.30.

The compounds of the non-metallic elements will be treated more in detail than in the elementary course, and the rarer elements will be included. The methods by

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which the atomic weights of the non-metals have been determined will be explained. Spectrum analysis.

A branch of physical chemistry will be treated in the SUMMER TERM.

Additional lectures will be given on Saturday during part of the session.

Course for the Victoria Intermediate in science and for the second year in the Honours school of chemistry.

Students who have not attended the elementary course will be required to attend part of it also.

Text-Books. — Thorpe, *Inorganic Chemistry*, vol. i; Mendeleeff, *Principles of Chemistry*; or Roscoe and Schorlemmer, *Treatise on Chemistry*, vol. i; or Miller, *Elements of Chemistry*, vol. ii; or Tilden, *Manual of Chemistry*; Graham-Otto, *Anorganische Chemie*; Wurtz, *Atomic Theory*.

Fee.—One Term, £1 10s.; Two Terms, £2 10s.; Course, £3.

Fee for elementary and course A together, £5 5s.

COURSE B

Metals

Tuesday, Thursday, 9.30-10.30.

The whole of the metallic elements and their compounds will be more fully treated, and special attention will be paid to recent researches. Metallurgy of the leading metals. Alloys. Technical processes. Methods by which the atomic weight of each metal has been determined.

This is one of the courses for the Victoria Final B.Sc., and for the first year in the Honours school of chemistry.

Text-Books.—Richter, *Inorganic Chemistry*; Mendeleef, *Principles of Chemistry*; Thorpe, *Inorganic Chemistry*, vol. ii; or Roscoe and Schorlemmer, *Treatise on Chemistry*, vol. ii; or Miller, *Elements of Chemistry*, vol. ii; or Tilden, *Manual of Chemistry*.

Fee.—One Term, £1 10s.; Two Terms, £2 10s.; Course, £3.

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Course C

ORGANIC CHEMISTRY

Monday, Friday, 9.30-10.30.

A systematic exposition will be given, illustrated by experiments, of the preparation, properties and relations to each other, of the most important groups of carbon compounds; the methods by which the constitution of organic compounds is determined; typical examples of laboratory experiments; chemical laws specially illustrated by organic compounds; method of conducting laboratory experiments and syntheses.

Text-Books.—Perkin and Kipping, *Organic Chemistry*; Richter, *Organic Chemistry*.

Book of Reference.—Meyer and Jacobson, *Organic Chemistry*.

This is one of the courses which may be taken for the Victoria Final B.Sc. and the M.Sc., and one of the courses required for the Honours B.Sc. degree in the school of chemistry. It is also useful for the London B.Sc. and Intermediate M.B. examinations.

Fee.—One Term, £1 10s.; Two Terms, £2 10s.; Course, £3.

Course H

Higher Course on Organic Chemistry

Wednesday, Friday, 2.0-3.0.

These lectures on special advanced subjects are intended for M.Sc. and Honours students, and other advanced students who have attended the course C.

Books of Reference.—Roscoe and Schorlemmer, *Treatise on Chemistry*, vol. iii; Meyer and Jacobson, *Organic Chemistry*; Beilstein, *Handbuch d. Org. Chem.*

Reference should be made to the various Chemical Journals and Proceedings of Societies.

Fee.—Each Session, £2.

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Course D

PHYSICAL CHEMISTRY

Short courses will be given on some of the more important branches of physical chemistry, at hours to be arranged. A few practical exercises will be provided for the more advanced students.

Text-Books.—Walker, *Introduction to Physical Chemistry*, or Reychler-McCrae, *Outlines of Physical Chemistry*; Ostwald, *Outlines of General Chemistry*; Ostwald, *Solutions*; Nernst, *Theoretical Chemistry*; Van t'Hoff, *Lectures on Theoretical and Physical Chemistry*, vols. i, ii.

Books of Reference.—Ostwald, *Foundations of Analytical Chemistry*; Van t'Hoff, *Studies in Chemical Dynamics*; Ostwald, *Lehrbuch der Allegemeine Chemie*; Ostwald, *Physico-Chemical Measurements*; Naumann, *Lehr-und Handbuch der Thermochemie*; Berthelot, *Mecanique Chimique*; Lüpke, *Elements of Electrochemistry*.

Current numbers of leading Chemical Journals and Proceedings of Societies should be read.

Fee.—One Term, £1; Course, £2.

Course E

HISTORY OF CHEMISTRY AND OF THE DEVELOPMENT OF CHEMICAL PHILOSOPHY

Wednesday, 9.30-10.30.

Text-Books.—Meyer, *History of Chemistry*; Wurtz, *Atomic Theory*; Ostwald, *Outlines of General Chemistry*; Alembic Club, *Reprints*; Schorlemmer, *Rise and Development of Organic Chemistry*; Ramsay, *The Gases of the Atmosphere*.

Books of Reference.—Kopp, *Geschichte der Chemie*; Thomson, *History of Chemistry*; Thorpe, *Essays in Historical Chemistry*; Meyer, *Modern Theories of Chemistry*.

Current numbers of leading Chemical Journals and Proceedings of Societies should be read.

Fee.—One Term, £1; Two Terms, £1 10s.; Course, £2.

Courses D and E are for second or third year students, for Victoria M.Sc., and chemistry Honours B.Sc. The Autumn and Lent Term courses are useful for London B.Sc., and to all senior students.

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Course F

APPLIED CHEMISTRY

Lectures on technology are given in connection with laboratory work at hours to be arranged. The subjects are varied in different years.

1. Alkali and allied manufactures.
2. The general principles of metallurgy.
3. Iron and steel, aluminium.
4. Copper, lead, silver, gold and other metals.
5. Distillation of coal and tar industries.
6. Fuel and illuminating gas.
7. Chemistry applied to sanitation.
8. Technical gas analysis.
9. Electro-chemical work.

These courses are varied from year to year. Some of them are required for Victoria B.Sc. Honours in chemistry, for the technological certificate of the College, and for the associateship of the Institute of Chemistry. Students are recommended to attend lectures on three subjects, one in each year.

During the session 1900—1901, the courses will be on alkali manufacture, fuel and illuminating gas, gas analysis, and on electro-chemical work.

Fee. — For each lecture course, £1 10s. For laboratory work, see pp. 186-188.

F 1. Fuel and Illuminating Gas

Wednesday, 11.30-12.30.

Text-Books.—Mills and Rowan, *Fuel*; Sexton, *Fuel*.

Fee.—£1 10s.

F 2.—Alkali Manufacture and kindred Industries

Friday, 10.30-11.30.

Text-Books.—Lunge, *Manufacture of Sulphuric Acid and Alkali*; Lomas, *Manual of the Alkali Trade*.

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Gas Analysis

SUMMER TERM.—Lecture demonstration and practical class at hours to be fixed.

Fee.—For lecture course, £1 10s. For laboratory work, see pp. 186-188.

Electro-Chemical Work

This is entirely a laboratory course.

(II) PRACTICAL CLASSES

1. Junior

Tuesday, 4.0-5.30.

AUTUMN AND LENT TERMS.—To fix the subjects of the elementary course in the student's mind, he will be taught to prepare for himself some of the elementary bodies and their simple compounds, to investigate the properties of the more common gases, and to fit up apparatus and perform some of the experiments illustrating the subjects of the course.

Engineering and electrotechnical students attend this course.

All students attending the elementary course are recommended to attend this class; Victoria science candidates in particular are recommended to take it, along with the elementary lecture course, before their Preliminary examination.

Fee.—One Term, £1; Course, £1 10s. Ten shillings will also be charged for materials and the loan of apparatus; *students will not provide their own apparatus for this class.*

Students must apply at the chemical laboratories for a bench *immediately* after registration.

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2. Intermediate

Saturday, 9.30-1.0 ; and during the AUTUMN TERM, Thursday, 2.0-5.0.

Qualitative analysis of inorganic substances, and of some of the more common organic substances ; preparation of inorganic compounds.

This course should be taken by all students who require practical chemistry.

It is required by those preparing for Victoria or London Intermediate in science, for Preliminary scientific of London, for the first M.B. of Victoria and Edinburgh, and for the Medical Boards and other examinations.

Text-Books.—Campbell Brown, *Practical Chemistry*, Part I, *Analytical Tables*.

Fee.—£4 4s. Twelve shillings and sixpence will also be payable to the laboratory for materials and the loan of apparatus ; *students will not provide their own apparatus for this class.*

Students must apply at the practical theatre for a bench *immediately* on registration.

3. Revision

A revision class will be provided if required.

Fee.—£2 2s. Ten shillings will be charged for materials and the loan of apparatus.

Senior

4. *Practical Organic* (including advanced medical class). Two half days per week, at times to be arranged.

Suited to the wants of those preparing for the London B.Sc. and Intermediate in Medicine.

Text-Books.—Campbell Brown, *Practical Chemistry Tables* ; Fresenius, *Qualitative Analysis* ; Garrett and Harden, *Practical Organic Chemistry*.

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In order to meet the papers now being set at the London Intermediate examination in Medicine, it is advisable for students to take this class for at least three Terms.

Fee.—One Term, £4; Three Terms, £7. (See composition fee).

5. AUTUMN AND LENT TERMS.—Two half days per week.

Practical exercises on technology, pharmaceutical chemistry, sanitary subjects, examination of water and air, of animal secretions, urinary deposits, calculi, and poisons.

This course will qualify for the Cambridge, Victoria, and other examinations in Public Health. It is taken along with the course of bacteriology. See *Special Prospectus.*

Other special technical courses will be arranged if a sufficient number of students apply.

Fee.—£5 5s.

6. Quantitative class. Course arranged to suit the requirements of the London University B.Sc. examination, Pass and Honours, and for Intermediate M.B. Honours.

ADAPTATION TO EXAMINATION REQUIREMENTS

Victoria Preliminary. Elementary course, AUTUMN and LENT TERMS.—Practical No. 1.

Victoria First Medical. Elementary course—Practical No. 2; or, laboratory one day per week.

Victoria Intermediate in Science. Students not proceeding further in chemistry than the Intermediate, and who have not attended the elementary lectures, take elementary three terms, and laboratory one day per week. Students intending to take chemistry at the Final, take AUTUMN and LENT TERMS of

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course B, the organic part of the elementary course, and laboratory either one and a half days per week, or one day per week and practical No. 2.

Victoria Final B.Sc. Courses A (or B, if A was attended in the intermediate year) and C. Laboratory two and a half days per week.

Victoria M.Sc. Courses H, D, and E. Laboratory five days per week.

Victoria Honours School of Chemistry. Three Terms each year.

Preliminary Year. Elementary course and practical (1) and (2).

First Honours Year. Courses A and B. Course F.—Laboratory three days per week.

Second Honours Year. Course A (if not attended in first Honours year). Courses C and H. Course D or E. Course F.—Laboratory three days per week.

Third Honours Year. Course E or D. Course H, Course F.—Laboratory five days per week.

London Matriculation. Elementary course, one and a half terms.

London Prel. Sc. (Med.). Elementary course: practical No. 2, and one month laboratory for volumetric analysis.

London Intermediate in Medicine. Organic Chemistry. Course C in the first year and laboratory two half days per week during the second year, after passing the first examination, are recommended; but the lectures and laboratory may be attended in the same year, if necessary.

London Intermediate in Science. Elementary course and course B, and laboratory two half days per week.

London Prel. Sci. (Med.) Honours and Intermediate Science Honours. Laboratory two days per week additional.

London B.Sc. Courses A and E. Laboratory three days per week. Courses B and C are also useful if they have not been attended before Final year.

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Edinburgh First Professional or *Dublin.* Elementary course and practical No. 2; Three Terms.

Conjoint Board Diploma. AUTUMN TERM, elementary course, and LENT TERM, special course, Monday, Wednesday, and Friday, at 9.30. Practical No. 2.

Dental Students. Lectures same as Conjoint Board. Practical—part of No. 2. AUTUMN AND LENT TERMS.

Diplomas in Public Health. Two days per week laboratory practice for two terms will generally be required. In some cases two half days per week will suffice.

Pharmaceutical Society Examinations. Pharmacy students preparing for the minor examination will attend the Elementary class during Three Terms. Those preparing for the major examination will attend course C in the AUTUMN, LENT, and part of the SUMMER TERMS, and occasional supplementary lectures, at 11.30. Practical work two days a week for two terms for the minor, and six hours a week for two terms for the major, is arranged in the laboratory. See special School of Pharmacy prospectus.

Engineers. Special course and practical No. 1. Engineering students who have a knowledge of chemistry may take the metallurgy lectures and practical course. Engineering Honours students require elementary course for two terms, or two days per week metallurgy for three terms.

D.Sc. Any of the advanced or higher courses, and laboratory six days per week.

TABLE OF COMPOSITION FEES

Courses A, or B, and elementary together, £5 5s.

Course A or B, AUTUMN and LENT, with elementary, LENT and SUMMER, £4.

Courses A and B (AUTUMN and LENT TERMS) together, £4 10s.

The first M.B. Victoria fee of £23 14s. covers the elementary course and practical No. 2.

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The London Prel. Sci. composition fee covers the elementary course and practical No. 2, as in Victoria, but not the additional laboratory work on volumetric analysis.

London Interm. Medicine, one course of lectures and laboratory two half days per week for one year, £8.

Conjoint Board requirements. Lectures and practical, £7 4s.

Engineering and electrotechnical students, £4.

Pharmacy students. The composition fee includes chemistry lectures and practical. See School of Pharmacy prospectus.

Metallurgy, elementary course, lectures and practical, £4.

CHEMICAL LABORATORY

The chemical laboratories, recently extended by the William Gossage laboratory and metallurgy rooms, provide convenient accommodation for every kind of chemical work and research.

Separate rooms are provided for organic work and quantitative analysis, water analysis, gas analysis, photometry and photography, spectroscopic and microscopic work, and electro-chemical work. There is a balance room, and furnace room with glass-blower's table, lavatories, and a separate room for ladies.

Additional metallurgical furnaces and a separate room equipped for the study of electro-chemical analysis have been added.

The teaching is aided, both in the inorganic and in the organic branches of the science, by a chemical museum. A dynamo and secondary batteries are provided for experiments in the reduction of metals and other work employing electricity.

The laboratories are open to students daily from 10.0 to 5.0, except on Saturdays, when they close at 1.0. The courses are intended to instruct the student in chemical manipulation, qualitative and quantitative analysis, gas,

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water and other special branches of analysis, organic synthesis and analysis, pharmaceutical chemistry, metallurgy, electro-chemistry, spectroscopy, photography, photometry, and in the methods of performing chemical researches in pure chemistry, and making investigations with the view of applying chemistry to manufactures, agriculture, or hygiene, or to aid in the study of other sciences.

Each student is supplied with a separate working table, with lock-up cupboard, a set of re-agents, gas, water, &c.; but he is required to supply his own set of apparatus as specified in the laboratory regulations. Some of the larger apparatus required by students may be obtained on loan from the College, subject to regulations prescribed by the Professor; but each student will be required to defray the cost of any article broken, lost, or destroyed. More advanced students have to supply themselves with such materials as are not included in the ordinary re-agents of the laboratory.

Students working in the laboratory must attend the lecture course on that branch of chemistry which they are studying, unless they can satisfy the Professor that they have sufficient knowledge; and those attending any of the higher courses must either have attended the next lower course or satisfy the Professor that they have sufficient knowledge.

Laboratory Text-Books.—Perkin and Lean, *Introduction to the Study of Chemistry*; Campbell Brown, *Practical Chemistry*; Fresenius, *Qualitative and Quantitative Analysis*; Ostwald, *Foundations of Analytical Chemistry*; Gatterman, *Practical Methods of Organic Chemistry*.

Laboratory Fees.—Students engaging places in the laboratory for the whole week pay a fee of £10 10s. per Term, or £21 for the whole Session.

Those who are sufficiently far advanced to attend the William Gossage laboratory are admitted during five or six days per week at any hour.

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By those who are able to spend only a smaller time the following fees are payable :—

	1 Term, 3 Months.	3 Terms, 1 Session.
Three days per week	£7 0 0 ...	£13 0 0
Four days per week	9 0 0 ...	16 10 0
Five or six days per week...	10 10 0 ...	21 0 0

To the Junior laboratory students are not admitted on more than three or four days of the week. The fees are as follows :—

	1 Month.	1 Term, 3 Months.	2 Terms, 6 Months.	3 Terms, 1 Session.
One day per week ($\frac{\text{six}}{\text{hours}}$)	— ...	£4 ...	£6 ...	£7
Two days „ „	— ...	5 10s. ...	8 ...	10
Three days „ „	£3 ...	7 ...	10 ...	13

As a rule, laboratory students are expected to attend, per day, six hours of laboratory work at the assigned hours, but those attending only one day per week may attend for three hours on each of two days per week.

TECHNOLOGICAL CHEMISTRY CURRICULUM

Students desirous of gaining a thorough theoretical and practical acquaintance with technological chemistry, or who intend to adopt chemical work as a profession, must devote three or four years to special study.

Candidates for the Associateship or Fellowship of the Institute of Chemistry of Great Britain and Ireland are required to produce satisfactory evidence of having passed some examination in general school subjects,* and attended laboratory practice and courses of lectures on chemistry, physics, and mathematics (or engineering may be substituted for one course) during three years, at a recognized college, such as University College, and to pass two practical examinations held by the Institute itself.

* The Victoria Preliminary, or any of the Medical Entrance Examinations, or the Oxford and Cambridge Local Examinations, will be accepted by the Institute. Latin must be one of the subjects taken.

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Graduates in the Honours school of chemistry are exempted from all except the Final special examination of the Institute.

Special certificates are granted by the College Senate to students who pass the following or a similar curriculum, and who perform their work and pass periodical examinations to the satisfaction of their Professors; certificates will only be granted to such as can perform practical work in a reliable manner. Beginners will require a preliminary year's training before commencing the technological course.

Preliminary Year

Chemistry—The elementary course, practical classes 1 and 2.
Mathematics or mechanics.
Elementary engineering, drawing and design (in this or one of the following years).
German.
Or, Victoria preliminary course and examination may be taken.

First Year

Chemistry—Courses A and B; chemical laboratory, three days per week; technological chemistry, course F.
Physics, with laboratory work, one day per week.
Mathematics (Intermediate).
German.
Engineering, first year course, AUTUMN and LENT TERMS.
Intermediate B.Sc. examination may be passed.

Second Year

Chemistry—Course C on organic chemistry.
Lecture course D or E.
Technological chemistry, course F.
Chemical laboratory, four days per week.
Physics (second year course), or engineering, or mathematics.
The Final examination for the Victoria ordinary B.Sc. may be passed; or the Intermediate examination of the Institute of Chemistry may be taken.

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Third Year

In the third year the students should begin to specialize. The following are possible alternatives :—

(1) Courses D, E and F; course H. Any other courses omitted in a previous year. Laboratory, five days per week.

The degree of B.Sc. in the Honours school of chemistry may be taken.

(2) Metallurgical classes. Metallurgical laboratory, two days per week. Chemical laboratory, gas analysis and electrochemistry, two days per week. Physical and electrotechnical laboratory, one day per week.

(3) Courses D, E, and F. Physics (senior course).

Chemical laboratory, four days per week. Physical laboratory, one day per week.

(4) Courses D and F, and a course on chemistry applied to manufacturing operations.

Chemical laboratory, three or four days per week.

Engineering laboratory and electrotechnical laboratory, one day per week.

Students may finally choose a special subject either of research or of applied chemistry.

The Final examination for the Associateship of the Institute of Chemistry of Great Britain and Ireland may be taken after (1), (2), or (3).

Those who have taken the ordinary degree of B.Sc. may pass the Victoria M.Sc. examination in any subsequent year.

THE SHERIDAN MUSPRATT CHEMICAL SCHOLARSHIP of £50 per annum, tenable for two years, will be competed for on December 6, 7, and 8, 1900. Candidates should send in their names to the Principal not later than November 15.

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NATURAL HISTORY

Chair founded by the 15th Earl of Derby, 1881

Professor : W. A. HERDMAN, D.Sc., F.R.S.
Demonstrator and Assistant Lecturer : FRANK J. COLE.
Laboratory Assistant : W. A. GUNN.
'Fisheries' Assistants : { JAMES JOHNSTONE. ANDREW SCOTT.

Elementary Biology

Monday, Wednesday, Friday, 11.30-12.30.

AUTUMN and LENT TERMS.—This course is intended as an introduction to the study of the biological sciences, zoology, botany, anatomy, and physiology, and will consist of about 60 lectures on the morphology, physiology, and life-history of typical members of the leading groups of organisms.

The following is an outline of the course :—

Brief account of the structure and life-history of a higher plant for comparison with animals. The Frog as a typical animal, its structure and elementary histology and physiology. Protoplasm, its composition and properties. Cells, and cell-division. Animal and plant tissues. Ovum and spermatozoon, fertilization, and the embryology of Amphioxus and the Frog.

Protozoa and Protophyta : Amœba, Vorticella, Paramœcium, Gregarina, Torula (Saccharomyces), Bacterium, Protococcus and Spirogyra, their structure and life-histories. Comparison between plants and animals, and their characteristics. Fermentation and putrefaction.

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The Metazoa; unicellular and multicellular animals; reproduction. Hydra, its structure, physiology, and life-history. The Leech, the Earthworm, Arenicola—parasitism, segmentation. Cœlomata, invertebrata.

The Crayfish, the Cockroach, Anodon and Mytilus.

The Vertebrata; Amphioxus and the Dog-fish—the characters and classification of the vertebrate groups. Development of the Chick. The Rabbit—characters of the mammalia.

This class (along with the corresponding practical class) is necessary for the Victoria Intermediate B.Sc. and First M.B., and for the first examination of the Conjoint Board. It is also suitable for students preparing for London, Edinburgh, and other degrees in Medicine and Science; and is the course that should be taken by other students desiring a general outline of the subject (natural history or biology).

Fee.—For the Course, £3; for One Term, £2.

Short Course of Elementary Biology

The first half of the above lecture course (October to Christmas) is complete in itself, and gives an outline of the leading facts and principles of biology suitable for those who may desire to have some knowledge of the subject as a matter of general culture.

Fee.—£2.

Practical Biology

AUTUMN TERM.—Tuesday, Thursday, 9.30-11.30.

LENT TERM.—Tuesday, Thursday, 10.30-12.30.

A practical class of elementary biology will be held in connection with the above lecture course. The work will consist of the dissection and microscopic examination of the series of typical animals discussed in the lectures.

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Students working for a University examination must take this class as well as the lectures.

For the first examination of the Conjoint Board the first half (Autumn Term) of this practical class is necessary, together with a course of DEMONSTRATIONS on the types, which will be given in the Lent Term on Fridays from 9.30-11.30, or other hours arranged.

Text-Books.—Marshall and Hurst, *Practical Zoology*; Marshall, *The Frog*.

Fee.—£2 each Term; for the Demonstrations alone, £1.

Zoology—General Course

Monday, Wednesday, Friday, 9.30-10.30.

AUTUMN, LENT, and SUMMER TERMS. This course of about 100 lectures will deal with—

I. The general principles of biology, protoplasm, the cell, animal tissues, organs, and their functions, development, evolution, and phylogeny.

II. The comparative anatomy, embryology, taxonomy, phylogeny, and distribution of the classes and orders of animals.

This course will meet the needs of students preparing for honours in the London Preliminary Scientific (M.B.) and Intermediate examination in science, and for the Victoria or London Final B.Sc.

A corresponding practical course is given in the laboratory.

HONOURS STUDENTS, in their final year, take this course again with additional work, frequent examinations, and set work in the library and the laboratory, under the supervision of the Professor.

Text-Books.—Huxley's, Claus', Lang's, Parker and Haswell's *Manuals*; Herdman, *Phylogenetic Classification of Animals*; and other works which will be referred to from time to time in the lectures.

Fee.—For the Course, £4; for each Term, £2.

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Saturday Class

If there is a sufficient demand for it from teachers, students preparing for London University, or others unable to attend the ordinary day classes, a course will be arranged on Saturday forenoons, consisting of lectures on elementary biology, with corresponding practical work to follow. Those desiring such a class are requested to send in their names to Professor HERDMAN before 1st October.

Comparative Anatomy

Honours students in physiology, or any others requiring a course on comparative anatomy, should consult Professor HERDMAN.

Revisal Class—Practical and Lectures

Monday, Wednesday, Friday, 11.30-1.30.

SUMMER TERM.—This class is intended for students preparing for the Victoria First M.B. or Intermediate in Science, or London Preliminary Scientific or Intermediate, who have attended the elementary biology courses during the AUTUMN and LENT TERMS, and feel the need of carrying on their work during the summer. It is also suitable for Conjoint Board candidates rejected in elementary biology in April and preparing for the July examination.

The work on Mondays and Fridays will be practical, and will consist of a rapid revisal of all the types; while on Wednesdays there will be lectures and demonstrations on the embryology and comparative anatomy of the vertebrate types.

Fee.—£3.

The Wednesday lectures (forming a short course on comparative anatomy and embryology) may be taken alone at a fee of £1.

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Embryology

Tuesday, Thursday, 11.30-12.30.

SUMMER TERM.—This course will treat of the reproduction and embryology of the chief groups of the invertebrata and vertebrata, and will conclude with a few lectures on organogeny. It is intended for the Victoria Final B.Sc. in zoology, and for Honours students, and may be useful to others.

Fee.—£1 10s.

A special laboratory course will be arranged for any members of the above lecture class who wish to work practically at embryology.

Comparative Osteology

SUMMER TERM.—A series of osteological demonstrations will be given two or three days a week at an hour arranged to suit students. The osteology of all the leading types of the vertebrata, and the dentition of the mammalia will be discussed and illustrated by specimens. This class forms a part of the GENERAL COURSE ON ZOOLOGY.

Fee.—When taken separately, £2.

ZOOLOGICAL LABORATORY

The laboratory will be open to advanced students from 10.0 to 1.0, and from 2.0 to 5.0 throughout the session. The work, which will consist chiefly in the dissection and microscopic examination of typical animals from the invertebrate and vertebrate classes and orders, will be arranged to suit the requirements of students. Facilities will be given as far as possible to those wishing to work at any particular group, or to carry out original research.

The new museum, lately added to the department, contains a large collection of local marine invertebrates,

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which afford an unusual opportunity to any naturalists wishing to carry on faunistic or speciographic researches.

There is also a small 'Fisheries' laboratory, and a considerable collection illustrating the local sea-fisheries; and in connection with these facilities can be given for conducting fisheries' investigations.

The fees for laboratory work will depend upon the amount of time required by the student, and will be charged at the scale of £2 10s. a Term for each full day per week spent in the laboratory; £4 10s. for Two Terms; and £6 for the session. Students will be at liberty, if more convenient to themselves, to divide the time into half days, each of three hours' duration, the fee for which will be half that charged for the complete day.

The hire of microscopes for any of the practical classes, or for laboratory work, will be charged at the rate of 5s. for the Term, or 10s. for the Session.

Students attending any of the practical classes, or working in the laboratory, will have access to the Zoological Type Collection in the Natural History Museum.

Port Erin Laboratory

The Marine Biological Laboratory, which has been established at Port Erin, Isle of Man, by the Liverpool Marine Biology Committee, is now open for research work to advanced students. Students of the biological departments of any colleges are permitted to work at the laboratory on payment of 10s. per week, including the use of all the apparatus and other appliances. Persons wishing to work at the Marine Biological Laboratory should apply to Professor HERDMAN, the Director.

The Council of University College has recently acquired, in consideration of an annual grant, the right to have one of the work-places at the Biological Station reserved solely 'for the use of college students and others nominated by the Professor of Natural History.'

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MEDICAL STUDENTS should take the following biological courses :—

VICTORIA FIRST M.B. *or* INTERMEDIATE IN SCIENCE AND LONDON PRELIMINARY SCIENTIFIC

AUTUMN and LENT TERMS.—Elementary biology, lectures, and practical class.

LENT and SUMMER TERMS.—Botany, course A (lectures), and course B (practical); and zoology revisal class (optional).

These classes, except the optional revisal class, are covered by the first M.B. composition fee of £23 14s., exclusive of registration fee.

CONJOINT BOARD FIRST EXAMINATION

AUTUMN TERM.—Elementary biology, lectures, and practical class.

LENT TERM.—Elementary biology, lectures, and course of demonstrations.

SUMMER TERM.—Zoology revisal class (if referred in April).

Students preparing for the VICTORIA SCIENCE DEGREES should take the following course :—

First Year.—Same as medicals, see above.

Second Year.—General course, Three Terms, corresponding laboratory work.

Third Year (for Honours).—General course, embryology, osteology, and laboratory work.

Students for other medical degrees, and all science students in biology, should consult Professor HERDMAN, who has been appointed by the Senate Tutor to junior medical and science students, as to the most suitable courses for their purposes.

EVENING LECTURES

See Evening Syllabus.

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BOTANY

Chair founded by Mr. Holbrook Gaskell and other Citizens of Liverpool, 1889

Professor : R. J. HARVEY GIBSON, M.A., F.L.S.

Demonstrator and Assistant Lecturer : F. J. LEWIS.

A full course of instruction in Botany, including lecture classes and practical work, extends over a period of three years.

In the first year the student will pass through the elementary theoretical and practical classes, covering the work prescribed for the botanical portion of the course in Elementary Biology. These classes are taken in the LENT and SUMMER TERMS, and consist of about 50 lectures (with practical work) on the morphology and physiology of selected types. Special attention is directed to training in observation, drawing, and methods. During the AUTUMN, LENT, and SUMMER TERMS following, students who have passed satisfactorily through the elementary course will proceed to the more advanced work. The lecture course will consist of about 100 lectures, and the practical class of about 60 meetings of three hours each. These courses qualify for the ordinary Final B.Sc. examination in Botany. The final year will be devoted to laboratory and field work, with lectures on subjects requiring systematic review ; the work being regulated in accordance with the requirements of candidates for an Honours degree in Botany.

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A general elementary course of evening lectures will be given during the AUTUMN and LENT TERMS. The lectures will deal with the fundamental principles of the morphology and physiology of plants.

An evening practical class is held during the SUMMER TERM, and conducted by the Assistant Lecturer.

During the LENT TERM a course of lectures will be given on the *Structure and Diseases of Timber*. The course will be specially adapted to the requirements of architectural and engineering students. Classes, both lecture and practical, are also held during the session for pharmaceutical students.

The laboratory, museum, and herbarium will be open from 10.0 to 12.30, and from 2.0 to 5.0 during the session, to students desirous and capable of prosecuting original research.

The fees for laboratory work will depend on the amount of time required by the student, and will be charged on the scale of £2 10s. per Term for each full day per week spent in the laboratory ; but students may, if more convenient to themselves, divide the time into half days, each of three hours' duration, and the fee for two such half days will be the same as that charged for the complete day.

The hire of microscopes for any of the practical classes, or for laboratory work, will be charged at the rate of 5s. per Term.

The botanical classes are at present held in the old College buildings, but the department will, probably before the end of the session, be transferred to the new Botanical Institute in Brownlow Street, at present in course of erection, and presented to the College by Mr. W. P. Hartley. The new buildings will, in addition to a large lecture theatre, class-room, and museum, contain junior, senior, and research laboratories, library, herbarium

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and private rooms, workshop, and storerooms, all completely fitted and equipped with the needful apparatus for teaching and research.

FIRST YEAR COURSES

Elementary Biology. Botany

COURSE A (THEORETICAL)

LENT TERM.—Monday, Wednesday, 10.30-11.30.

SUMMER TERM.—Monday, Wednesday, Friday, 10.30-11.30.

The Lectures delivered during the LENT and SUMMER TERMS are intended to form an introduction to the principles and methods of Botany, and will be devoted to the discussion of the morphology and physiology of a series of selected types.

Fee.—£3.

COURSE B (PRACTICAL)

LENT TERM.—Thursday, 2.0-4.0.

SUMMER TERM.—Tuesday, Thursday, 10.30-12.30.

This class is designed for students attending Lecture Course A, and will include the practical examination of the types discussed in the lectures.

Fee.—£3.

Courses A and B form the botanical section of the course in Elementary Biology required by candidates for the Victoria First Medical and Intermediate Science examinations. Candidates for the London Preliminary Scientific and Scotch Universities' First Professional are also recommended to take these courses. Both courses are covered by the First M.B. composition fee of £23 14s.

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SECOND YEAR COURSES

Advanced Botany

COURSE C (THEORETICAL)

Monday, Wednesday, Friday, 11.30-12.30.

AUTUMN, LENT, and SUMMER TERMS.—This course is intended for students who have already gone through a training in elementary Botany, and are familiar with the subjects discussed in Courses A and B. Students who have not attended these courses will not be permitted to attend the advanced classes, unless they can satisfy the Professor that their knowledge of elementary Botany is sufficiently extensive and accurate to warrant their admission.

The following subjects will be treated of in the lectures :—

I. Morphology and classification of the vegetable kingdom.
II. Anatomy, histology, organogeny, and organography.
III. Comparative physiology.
IV. Geological and geographical distribution of plants.

Fee.—£4.

COURSE D (PRACTICAL)

AUTUMN, LENT, and SUMMER TERMS.
Six hours per week.

The work of this class will consist in the examination of illustrative types of the groups discussed in the lectures, with practical physiological work. In the SUMMER TERM field demonstrations will be held on Saturday afternoons.

Fee.—£6.

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THIRD YEAR COURSES

Course E (Honours Course)

Students who are preparing for the Honours B.Sc. degree in Botany will be required to attend such lectures and laboratory work as may from time to time be prescribed by the regulations of the University. The course will include not less than 3 lectures and two and a half days' laboratory work per week during 3 Terms. Students will be expected to carry on in addition a course of private reading, under the direction of the Professor.

Fee.—Lectures, £4; Practical Class, £12.

Course F (Applied)

Friday, 10.0–11.0.

During the Lent Term a course of lectures will be delivered on the *Structure and Diseases of Timber*, and will be specially adapted to suit the wants of architectural and engineering students.

Fee.—15s.

Course G (Pharmaceutical)

A course of 40 lectures, with practical work, will be given during the Autumn and Lent Terms, which will be suitable for candidates for the minor examinations of the Pharmaceutical Society of Great Britain.

The lectures will deal with the following subjects:—

A. The morphology, anatomy, and histology of vascular plants.

B. The principles of physiology.

C. The principles of classification.

In the practical class students will be instructed how to use the microscope, to prepare and mount sections, and

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to recognize and draw the chief tissues occurring in higher plants. They will also be required to prepare, mount, and examine preparations illustrating the anatomical features presented by the chief types of root, stem, leaf, flower, and fruit.

During the SUMMER TERM a course of 20 lectures, with practical work, will be given, suitable for candidates for the major examination of the Pharmaceutical Society of Great Britain.

For hours, fees, etc., see p. 213.

EVENING LECTURES.

See Evening Syllabus.

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PHYSIOLOGY

Chair founded by Mr. George Holt of Liverpool, 1891

Professor: C. S. SHERRINGTON, M.A., M.D., F.R.S.

Assistant Lecturers:

A. S. GRÜNBAUM, M.A., M.D., M.R.C.P.,

J. S. MACDONALD, B.A., CANTAB, L.R.C.P., L.R.C.S.

Demonstrator: J. C. EWART, B.Sc.

Laboratory Assistant: G. E. COX.

I. LECTURES

(1) Systematic Physiology

Monday, Tuesday, Thursday, Friday, 11.30-12.30.

AUTUMN and LENT TERMS.—This course consists of rather more than 80 lectures. It deals with the whole scope of animal physiology, and includes a certain amount of advanced histology. Some knowledge of inorganic and organic chemistry, of physics, and of general anatomy is presupposed. The course is suited for the Final examination for the Ordinary and Honours degree of B.Sc. Physiology can be taken as a main subject for an Ordinary, or as the main subject for an Honours B.Sc. degree; and it can be taken as a subsidiary subject with zoology, chemistry, or botany.

That part of it which treats of the senses and of nerve is dealt with in the portion of the lecture-course delivered in the LENT TERM, and contributes to psychology, a subject of examination in the philosophy Honours

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school for the B.A. degree. The lecture course is also suitable for students preparing for the London B.Sc., as also for students for medical degrees (see prospectus of Medical Faculty).

Fee.—One Term, £2 10s.; Course, £4 4s.

(2) Chemical Physiology

Wednesday, 2.0-3.0.

In the SUMMER TERM, Dr. GRÜNBAUM gives a course of lectures on this subject.

Fee.—£1 1s.

(3) Elementary Psycho-physiology

Saturday, 11.30-12.30.

AUTUMN and LENT TERMS.—This course deals with those parts of physiology and psycho-physics which are of special importance to students taking up the profession of teaching, both in primary and secondary schools. The lectures are illustrated by experiments, and embrace the following subjects:—

Blood, blood-vessels, heart and general features of the circulation considered introductorily to consideration of the blood supply of brain and nerve. Digestion and absorption of food, food and diet in general and in particular as maintaining and conditioning mental activity. Respiration, ventilation, pure and foul air, especially in reference to healthy action of the nervous system. Animal temperature, evaporation from the body surface, clothing, pressure and moisture of the atmosphere, warmth and cold in relation to health in general, and that of the brain and nervous organs in particular. The nerves, spinal cord and brain, their intimate structure and their functions. Reflex nervous action. Sensations and their classification. Intensity of sensations: measurement by WEBER's and FECHNER's methods. Perceptions of likeness.

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Psycho-physiological standard of energy. Perception of space. Bodily space, tactual space, monocular space, binocular space. The eye as an optical instrument. Visual sensations of brightness, of colour. Perception of time. The psycho-physiological time-standard. Sensations from the skin. Muscular sense. Muscular contraction and the execution of movements. Time of sensation. Time of reaction. Time of thought. Emotion. The problem of attention. Pain. Memory. Recognition. Fatigue: muscular, mental, sitting, standing. Tests for and observation of fatigue. The physiology of reading; the lighting of the schoolroom. Visual headache, visual hygiene. Vocalization and speech, physiology of phonetics, the law of 'minimal muscular effort.' Hearing. Rhythm. The physiology of writing: muscular movements as indicating states of nervous system. Hygiene of the muscles. Volitional movements. Observation and the training of the senses. Mental phenomena in animals. The senses and the mind in childhood.

Fee.—Course, £1.

(4) Histology

Tuesday, Thursday, 2.0–3.0.

A course of lectures on animal histology is given during the SUMMER TERM (May, June, July). This course is in connection with that of practical histology. Each lecture is followed by a demonstration of microscopical preparations.

Fee.—£2 2s.

II. LABORATORY COURSES

(1) Practical Physiology

Tuesday, 2.0; Friday, 1.30.

Part i.—During the AUTUMN TERM (October, November, December), a course of practical physiology

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is held, comprising exercises in chemical and physical physiology, *excluding the use of quantitative and graphic methods*. All students must provide themselves with small scalpel, fine forceps, scissors, a seeker, mounted needles, silk, cotton, small glass syringe, and drawing-book.

Fee.—£2 2s.

(2) Practical Physiology

Monday, 2.0; Wednesday, 9.0; Friday, 1.30.

Part ii.—During the LENT TERM (January, February, March), a special course, comprising exercises in chemical and physical physiology, *involving quantitative and graphic methods*, is given.

Fee.—£4 4s.

(3) Practical Psycho-physiology

Tuesday, 3.30.

SUMMER TERM.—Each member of the class carries out, under supervision, experiments in examination of the senses, of adaptation, of judgment, of sense-discrimination in space and in time, of range of consciousness and attention, of muscular action, of measurement of simple and compound reaction times, association and memory, results of exercise, phenomena, theory and treatment of fatigue.

Most of the experiments require co-operation of two workers; it is therefore desirable that each student desirous of taking the class should join it in arrangement with another student.

(4) Tutorial Class

A tutorial class for senior students is held during the LENT and SUMMER TERMS. Special classes will also be arranged, if required, for special examinations. These classes are open to all members of the systematic or practical classes without further payment.

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(5) Practical Physiology

Monday, Wednesday, Friday, 2.0-40.

This class is held in the SUMMER TERM, and comprises exercises in chemical and experimental physiology, and in histology.

Fee, £3 3s.

(6) Practical Histology

Monday, Wednesday, Friday, 11.30-1.30.

A systematic course of practical histology is held during the SUMMER TERM (May, June, July). Each member of the class must provide, for his own use, microscopic slides, cover glasses, pencil, drawing book, section lifter, mounted needles, six watch glasses, small glass syringe, razor, fine scissors, fine forceps, small scapel, and a soft dusting cloth. Before entering upon this class each student is strongly advised to furnish himself with a reliable microscope; among the makers of reliable instruments of moderate cost, Swift & Sons, London, and Leitz, of Wetzlar (English Agent, R. Kanthack, London), can be recommended. A limited number of microscopes may be hired from the laboratory by members of the classes at a payment of 10s. per term, but this course is not advised; the best of the laboratory instruments are reserved for demonstration purposes.

Fee.—£5 5s.

PHYSIOLOGICAL LABORATORY

The laboratory is open from 10.0 to 5.0 throughout the session, under the direction of the Professor.

Fee.—£2 per Term for each day that the laboratory is used per week, or 5s. for each single day of five hours.

Books Recommended.—Physiology—Foster, *Text-Book*; Waller, *Human Physiology*; Stewart, *Manual*. Histology.—Schafer, *Essentials of Physiology*.

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SCHOOL OF PHARMACY

Professor of Chemistry :
J. CAMPBELL BROWN, D.Sc., F.C.S., F.I.C.

Professor of Physics :
Vacant.

Professor of Botany :
R. J. HARVEY GIBSON, M.A., F.L.S.

Professor of Materia Medica :
W. CARTER, LL.B., M.D., B.Sc., F.R.C.P.

Lecturer on Pharmacy :
PROSPER H. MARSDEN.

The courses of instruction are adapted to the requirements of candidates preparing for the Minor and Major examinations of the Pharmaceutical Society of Great Britain.

Particulars of the examinations are to be found in the prospectus of the Pharmaceutical Society, 16 Bloomsbury Square, London, W.C.

A student before entering the classes must have passed an examination accepted in lieu of the first examination of the Pharmaceutical Society.

GENERAL INFORMATION

During the academic year (October to July) there will be a junior and a senior course of instruction in each subject of the curriculum. The first or junior course includes the subject matter for the Minor or qualifying examination of the Pharmaceutical Society.

The second or senior course includes the subject matter for the Major examination of the Pharmaceutical Society.

A student who enters the school in October and passes the Minor examination in April, may pass the Major

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examination in July. All students are strongly advised to enter the school at the beginning of the Autumn Term in October, and spend an entire year in preparation for each of the examinations.

Museums

There are well equipped museums of chemistry; botany, containing a fine herbarium; and materia medica, the latter having been re-arranged and considerably extended.

General Regulations

Students are registered by the Principal at the commencement of each session. Fees must be paid at the time of registration.

Every student on entering is required to sign an obligation of comformity to the rules and regulations of the College.

Scholarship

Manchester Pharmaceutical Association Scholarship

This scholarship, of the value of about £26, is offered annually, and may be held in the School of Pharmacy of University College Liverpool. For the conditions, etc., the prospectus of the Pharmaceutical Society should be consulted.

Fees

	First Course	Second Course
Chemistry, Lectures	£3 0 0	£2 0 0
Chemistry, Practical	8 0 0*	6 0 0†
Physics, Lectures	1 1 0	6 0 0
Botany, Lectures...	3 0 0	2 0 0
Botany, Practical		
Materia Medica, Lectures... ...	2 2 0	2 2 0
Materia Medica, Practical ...		
Pharmacy, Lectures	4 4 0	——
Pharmacy, Practical		

* Two days a week for two Terms.
† Six hours a week for the Session, or two and a half days a week for one Term.

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Courses may be taken out separately ; or a composition fee of £17 may be paid, covering the entire junior course. Students paying the composition fee are required to complete the course within three sessions from the date of payment. The registration fee, payable by all students, whether taking the composition fee or otherwise, is £1 1s. for the whole Session, or if not more than two subjects are taken, 5s. for the Term.

TIME TABLE

FIRST COURSE.	M.	TU.	W.	TH.	F.	S.
Chemistry, Lectures	3.0	3.0			3.0	
Chemistry, Tutorial	*at hours to be arranged.*					
Chemistry, Practical						
Physics, Lectures (A.)			10.30			
Botany, Lectures and Practical...			2-4			
Materia Medica, Lectures and Practical ...	9.0		9.0		9.0	
Pharmacy, Lectures	*at hours to be arranged.*					
Pharmacy, Practical						

SECOND COURSE.	M.	TU.	W.	TH.	F.	S.
Chemistry, Lectures (S.) ..	3.0	3.0			3.0	
Chemistry, Do. ...	9.30				9.30	
Chemistry, Tutorial	*at hours to be arranged.*					
Chemistry, Practical						
Physics, Lectures (A.L.S.) ...	4.0	12.30		12.30		
Botany, Lectures and Practical...			2-4			
Materia Medica, Lectures	9.0	9.0		9.0		
Materia Medica, Practical ..						

CHEMISTRY

Professor : J. CAMPBELL BROWN, D.Sc., F.C.S., F.I.C.

Lecturers and Demonstrators : T. L. BAILEY, PH.D.; C. A. KOHN, M.Sc., PH.D.; A. W. TITHERLEY, M.Sc., PH.D.

(1) Lectures

Monday, Tuesday, Friday, 3.0.

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An exercise class will also be held on Thursday, at 3.0, or at some other time convenient, to be arranged.

The lectures for the Minor will occupy from October 1 to the end of March, or to the middle of June, with a vacation at Easter; and the student for the Major may extend his attendances over the following Autumn and Lent Terms' Organic Lecture Class C.

For details of course, see p. 178.

Fee.—Junior, £3; Senior, £2.

(2) Practical

Pharmaceutical students will be admitted to the chemical laboratory for two days per week during the Autumn and Lent Terms. Those who wish to work for a greater number of hours may do so by arrangement with the Professor of Chemistry.

Fee.—Junior, £8; Senior, £6.

PHYSICS

Professor: *Vacant.*

Demonstrator and Assistant Lecturer: W. H. Derriman.

Wednesday, 10.30.

Autumn Term.—A course of ten lectures, with practical demonstrations, will be given on properties of solids, liquids, and gases, and with the simpler phenomena of heat. It will be suited to the requirements of candidates for the Minor examination of the Pharmaceutical Society of Great Britain.

Fee.—£1 1s.

Candidates for the Major examination should attend junior physics, see p. 138.

Fee.—£6.

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BOTANY

Professor : R. J. HARVEY GIBSON, M.A., F.L.S.
Demonstrator and Assistant Lecturer : F. J. LEWIS.

(1) Junior

Wednesday, 2.0-4.0.

AUTUMN and LENT TERMS.—A course of forty lectures, with practical work, suitable for candidates for the Minor examination.

Fee.—£3 3s.

(2) Senior

Wednesday, 2.0-4.0.

SUMMER TERM.—A course of twenty lectures, with practical work, suitable for candidates for the Major examination.

For details of course, see p. 203.

Fee.—£2 2s.

Students proposing to attend the senior class must either have attended the junior class previously, or must give evidence of having satisfactorily studied the subjects treated of in that class.

The botanical museum and herbarium will be available to students for practical work and exercise in identification.

MATERIA MEDICA

Professor : W. CARTER, LL.B., M.D., B.Sc., F.R.C.P.

Demonstrator and Assistant Lecturer : PROSPER H. MARSDEN.

(1) Junior

Monday, Wednesday, Friday, 9.0-10.0.

AUTUMN AND LENT TERMS.—*Lectures* and *Practical.* In this course, the physical and diagnostic characters of

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each of the drugs of the British Pharmacopœia, and such others as are in common use, will be carefully described ; the geographical, botanical, and commercial sources indicated, the more important active principles enumerated, and the mode of collection and preparation for the market detailed.

Fee.—£2. 2s.

(2) Senior

Monday, Tuesday, Thursday, 9.0-10.0.

SUMMER TERM.—*Lectures* and *Practical.* This course will deal particularly with the consideration of the more important drugs and their constituents, the methods of assaying them, and of separating such of their active principles as are contained in the British Pharmacopœia.

The practical class will comprise the histology of drugs and the application of the microscope to their detection, the use of the various microchemical-reagents will be demonstrated, and instruction will be given in the preparation, examination and description of starches, hairs, glands, leaves, woods, barks, stems, rhizomes, roots, seeds, fruits, and flowers.

Fee.—£2 2s.

PHARMACY

Lecturer : PROSPER H. MARSDEN.

AUTUMN and LENT TERMS.—*Lectures* and *Practical*, at hours to be arranged.

The course will comprise the description and explanation of the pharmaceutical processes and operations by which galenical medicines are produced in the forms in which they are prescribed by the physician.

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Practice will be afforded in the recognition of galenical preparations, and in the reading and translation of autograph prescriptions.

Fee.—£2 2s.

The practical class will be held in the Dispensary of the Royal Infirmary.

The course will include :—

(i) Instruction in the art of dispensing.
(ii) The preparation of the various classes of galenicals.
(iii) The mounting and management of apparatus.

The whole of the laboratory work will be conducted by the pupils, under the immediate supervision of the Lecturer.

Fee.—£2 2s.

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LAW

Chair founded by Her Majesty the Queen, the Right Honourable the Earl of Sefton, W. B. Bowring, Esq., then Lord Mayor of Liverpool, and the Legal Profession, 1894.

Principal: A. W. W. DALE, M.A.

Professor: GEORGE H. EMMOTT, M.A., LL.M., Barrister-at-Law.

Lecturer in Common Law: F. E. SMITH, M.A., B.C.L., Barrister-at-Law.

Special Lecturer: LESLIE SCOTT, M.A., Barrister-at-Law.

Lecturer in Equity: OWEN WILLIAM OWEN, M.A.

Lecturer to the Evening Classes: W. H. S. OULTON. M.A., LL.M., Barrister-at-Law.

Hon. Secretary of the Board: J. E. BURTON BAGSHAW, Law Library, 10 Cook Street.

Hon Treasurer of the Board: A. T. MILLER, Law Library, 10 Cook Street.

The Law Classes of University College have been organized by the Liverpool Board of Legal Studies to afford continuous systematic instruction throughout the academic year in the principles of law, and to assist students preparing for the examinations of the Victoria and London Universities, of the Council of Legal Education, and of the Incorporated Law Society.

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EXAMINATIONS OF THE INCORPORATED LAW SOCIETY

1—The Preliminary Examination

The Preliminary Examination of the Victoria University is accepted by the Incorporated Law Society in lieu of their Preliminary Examination, provided that Latin has been one of the subjects selected.

Candidates placed in the First Division at the Preliminary Examination of the Victoria University are exempted from a year of service under Articles of Clerkship.

2—Intermediate Examination

Graduates in Law of the Victoria University are excused the Intermediate Examination prescribed by the Incorporated Law Society.

3—Final Examination

Students are recommended to take the courses in English Private Law.

VICTORIA UNIVERSITY LL.B.

In order to obtain the degree of LL.B. in the Victoria University, students must (1) matriculate in the University by entering their names on the University Register; (2) pass the Preliminary Examination; (3) pass the Intermediate LL.B. Examination in Roman Law, English Constitutional Law, Jurisprudence, and one other subject; (4) pass the Final LL.B. Examination in English Law.

Students who have been called to the Bar, or who have been admitted on the Rolls as Solicitors, and students who are reading in the chambers of a Barrister, or who are articled to a Solicitor, and who have passed the Intermediate LL.B. Examination, are required to attend

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classes in Law for three hours a week only, during two years after the date of passing such Intermediate Examination.

Students who take the degree of LL.B. before entering into articles (provided they offer Latin at the Preliminary Examination) are only required to be articled for *three* years.

Barristers called to the Bar, and Solicitors admitted on the Rolls, previous to the 1st of January, 1893, are excused the Preliminary Examination.

Barristers called to the Bar, and Solicitors admitted on the Rolls, previous to the 1st of January, 1896, *may* be excused the Preliminary Examination on application being made through the Registrar of the University to the General Board of Studies.

All graduates of any University are also excused the Preliminary Examination, and also the Arts subject at the Intermediate.

EXAMINATIONS OF THE COUNCIL OF LEGAL EDUCATION

The Council accept the Preliminary Examination of the Victoria University in lieu of their Preliminary Examination.

Graduates in Law of the Victoria University are not required to pass the Examination in Roman Law previous to being called to the Bar.

Undergraduates of the Victoria University who have completed two years of residence are excused the deposit of £100 ordinarily required by the Inns of Court.

Undergraduates of the Victoria University can keep their terms at any of the Inns of Court by dining in hall any *three* days in each term.

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PRIZES

THE VICE-CHANCELLOR OF LANCASTER'S PRIZES

Two prizes given by Samuel Hall, Esq., Q.C., Vice-Chancellor of the Duchy of Lancaster, are awarded on the results of the Sessional Examinations held in connection with the courses in (1) Real Property and Conveyancing, and (2) Equity. Each prize is of the value of £5 5s., and will be awarded in books relating to the principles, history or practice of Law selected by the winner of the prize, and approved by the Professor of Law.

MR. ALFRED TYRER'S PRIZE

A prize, given by Alfred Tyrer, Esq., Solicitor, is awarded on the results of the Sessional Examinations held in connection with the course in Common Law. The prize is of the value of £5 5s., and will be awarded in books relating to the principles, history or practice of Law selected by the winner of the prize, and approved by the Professor of Law.

Both the Vice-Chancellor's and Mr. Alfred Tyrer's prizes are open to the competition of all students who have attended the courses of lectures in connection with which the examinations are held, and who have obtained from the Professor or Lecturer a certificate of regularity of attendance. The three prizes may be awarded to the same student, either in one year or in successive years; but a student who has once gained the prize in any subject is not eligible to hold the prize a second time in the same subject.

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FEES

The fees payable for the respective classes are appended to the 'Time Table of Lectures and Classes,' which will be issued previously to the 1st of October. All fees are payable in advance to the Hon. Treasurer of the Board, 10 Cook Street. The following special Compositions are in force:—(1) Members of the Law Students' Association may join any of the professional courses of Lectures on payment of 7s. 6d.; (2) the three Lecture Courses in Law for the Victoria University Intermediate LL.B. may be compounded for by payment of £2 12s. 6d. (for One Term) or £6 6s. (for Three Terms). The fee for the class in Roman Law, for those attending the Lectures in that subject, is 10s. 6d. per Term.

PLACE OF LECTURE

All Law Lectures and Classes will be delivered at the Lecture Room adjoining the Liverpool Law Library, 10 Cook Street. Professor EMMOTT will attend at 10 Cook Street every Monday and Friday throughout the academic year, from 2.30 to 4.30, commencing with Monday, October 1st, to consult with both professional and degree students as to their work, and all students are invited to call on him as soon as convenient. Students reading for the Victoria Final will make special arrangements with Professor EMMOTT.

LECTURES AND CLASSES

Roman Law

Professor EMMOTT.

Monday, 5.0, beginning October 1st.

This course is intended to cover the ground required for the Intermediate Examinations of Victoria and London Universities, and also that prescribed by the

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Council of Legal Education. It will deal with the general history of Roman Law, and with the elements of Roman Law so far as contained in the Institutes of Gaius and Justinian, omitting the titles relating to intestate succession. Students are recommended to procure good parallel texts of Gaius and Justinian (*e.g.*, Gneist's *Institutionum et Regularum Juris Romani Syntagma*, Teubner, Leipzic), and Moyle's edition of the *Institutes of Justinian* (Clarendon Press, Oxford). Other useful works bearing on the subject matter of the course are Muirhead's *Historical Introduction to the Private Law of Rome*, Poste's or Muirhead's edition of the *Institutes of Gaius*, and candidates for the Examination of the London University should read Ortolan's works on this subject.

In connection with the above course a Class will be held on Friday, at 3.15, for reading of the Latin text and oral discussion of its subject matter.

The Law and Custom of the English Constitution

Professor EMMOTT.

Wednesday, 1.0, beginning October 3rd.

Similar objects to the course in Roman Law.

The Province of Constitutional Law. Written and Unwritten, Flexible and Rigid Constitutions. The Sovereignty of Parliament. Parliament and Elections. The Franchise. The Privileges of Parliament. Conflicts with the Courts. Freedom of Speech and of the Press. The Law of Libel. Growth and Development of the English Judicature. Outlines of English Constitutional History. The leading Cases and Statutes relating to English Constitutional Law will be carefully considered.

Works of Reference.—Dicey, *Lectures Introductory to the Study of the Law of the Constitution* (Macmillan); Taswell-Langmead, *English Constitutional History*; Sir William Anson, *Law and Custom of the Constitution* (Parts I and II); Thomas, *Leading Cases in Constitutional Law.*

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Analytical and Historical Jurisprudence

Professor EMMOTT.

Monday, 3.15, beginning October 1st.

Similar objects to the course in Roman Law.

Principles of Jurisprudence; Early History of Institutions. Analysis of Legal Conceptions. Sources of Law. Classification of Rights and Duties.

Works of Reference.—Holland's *Jurisprudence*; Austin's *Jurisprudence*; Markby's *Elements of Law*; and the works of Sir Henry Maine (especially *Ancient Law*).

Real and Personal Property and Conveyancing

Professor EMMOTT.

Lectures, Wednesday, 5.0; *Classes*, Friday, 5.0.

First Lecture, October 3rd.

AUTUMN TERM.—A course of 10 Lectures and 10 Classes.

These Lectures are organized to afford instruction in the general principles of English Real Property Law and the practice of Conveyancing, and to assist students preparing for the Final Examinations of the Incorporated Law Society, and the Council of Legal Education, as well as of the Victoria and London Universities. The Professor will deal specially with the law relating to deeds of Conveyance and Mortgages. A detailed syllabus will be subsequently issued.

Tuesday, 5.0; and Friday, 5.0.

LENT AND SUMMER TERMS

The Principles relating to the nature, creation, alienation and devolution of the estates and interests that may

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be held in Real and Personal Property. This course is intended for all students who are preparing for their Final Examination.

Text-Books and Works of Reference for both Courses.—Elphinstone's *Introduction to Conveyancing*; Seaborne's *Vendors and Purchasers of Real Property*; Goodeve or Williams on *Real Property*; Goodeve or Williams on *Personal Property*; Clark's *Student's Precedents in Conveyancing*; Davidson's *Concise Precedents in Conveyancing*.

Equity

O. W. Owen, M.A.

Lectures, Wednesday, 5.0; *Classes*, Thursday, 5.0.

First Lecture, December 12th.

A course of 10 Lectures and 10 Classes on the Law relating to Trusts and Trustees.

This course is intended to assist students in preparing for the Final Examinations of the Incorporated Law Society, and of the Council of Legal Education, and for the Victoria Final LL.B., and London Final LL.B.

Text-Books.—Snell's *Equity*; Brett's *Leading Cases in Modern Equity*; Underhill on *Trusts*.

Mr. Owen will also hold a Class on the Principles of Equity, from February to June (beginning about February 25th, times to be afterwards arranged), in which some or all of the following topics will be considered :—The Maxims of Equity, Conversion, Election, Satisfaction, Performance; Administration of Assets, Mortgages; Married Women, Infants and Lunatics; Accident, Mistake, Fraud; Accounts; Specific Performance; Injunctions; Receivers.

Common Law

F. E. Smith, M.A., B.C.L.

Lectures, Wednesday, 5.0; *Classes*, Thursday, 5.0.

First Lecture, about February 27th.

A course of 10 Lectures and 10 Classes on the Law of Torts.

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This course is intended to assist students in preparing for the Final Examinations of the Incorporated Law Society, and of the Council of Legal Education, and for the Victoria Final LL.B., and London Final LL.B.

Text-Book.—Pollock on *Torts*.

Thursday, 5.0, beginning October 4th.

Mr. Owen will also hold a Class on the Principles of the Common Law, with special reference to the Law of Contracts, from October to Christmas.

Text-Book.—Indermaur's *Principles of Common Law*.

Brokers and Factors

LESLIE SCOTT, M.A.

A course of 5 weekly Lectures, beginning in January.

These Lectures will deal with Brokers and Factors, their rights, liabilities, and authority at Common Law; the incorporation into contracts of trade usages and regulations as on the Cotton, Corn, or Stock Exchanges; rights of action and liens; the Factor's Act, 1889, and its effect upon the position of Factors and persons dealing with them.

Practice of the Courts

Tuesday, 5.0, beginning October 2nd.

Mr. Owen will hold a Class on the above subject, from October to Christmas.

Text-Book.—Gibson and Weldon's *Practice*.

Probate, Divorce, and Admiralty

Friday, 5.0, beginning about February 22nd.

Mr. Owen will hold a Class on the above subjects from February to June.

Text-Books.—Gibson and Weldon's *Probate, Divorce, and Admiralty*.

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EVENING LECTURES ON COMMERCIAL LAW

W. H. S. OULTON, M.A., LL.M.

Carriage of Goods by Land and Sea

Mr. Oulton will deliver a course of about eight weekly lectures at University College, from 8 to 9 p.m., commencing about Friday, October 12th, and to be continued on successive Friday evenings.

This course is primarily intended for bank officials, accountants, and young business men. A detailed Syllabus will be issued towards the end of September.

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CITY OF LIVERPOOL SCHOOL OF ARCHITECTURE AND APPLIED ART

ARCHITECTURE

Chair founded by Citizens of Liverpool to commemorate the name of William Roscoe, 1881

Roscoe Professor of Art : FRED. M. SIMPSON.

Demonstrator and Assistant Lecturer : *Vacant.*

Modelling : CHARLES J. ALLEN.

Decorative Design : J. HERBERT MCNAIR.

Painting and Drawing : HERBERT JACKSON.

Stained Glass : J. HERBERT MCNAIR & R. WARRINGTON.

TERMS

The Architectural Studio

AUTUMN TERM.—Thursday, October 4, to Thursday, December 20.

LENT TERM.—Monday, January 7, to Friday, March 22.

SUMMER TERM.—Monday, April 22, to Friday, June 28.

EVENING CLASSES commence on Monday, October 15.

Students who intend to join the classes should write to Professor SIMPSON *and fix an appointment before term begins, so as to be able to commence work without loss of time.*

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The other Studios and Workshops

AUTUMN TERM.—Monday, October 1, to Friday, December 21.

LENT TERM.—Monday, January 7, to Friday, March 15.

SUMMER TERM.—Monday, March 18, to Wednesday, April 3, and Thursday, April 11, to Friday, June 7.

ARCHITECTURE

The architectural department comprises a well-fitted studio, a lecture room, museum, and cast room. There is a large collection of architectural plates, drawings, photographs, etc., for the use of students. In the departmental library are about 100 volumes of the best books of reference. The museum contains examples of building materials and models of building construction, and a representative collection of architectural casts.

The architectural studio is open every week-day, except Saturday, during the College terms, from 9.30 to the times mentioned in the table; and from 7.0 to 9.0 on three evenings each week during the AUTUMN and LENT TERMS only.

The course of studies is arranged under two heads to meet the wants of two classes of architectural students.

1. A complete course of preliminary training is provided, extending over two years, for students to pass through before entering an architect's office.

2. Classes are held in the day and evening for students already engaged in architects' offices as pupils or assistants.

I. THE TWO YEARS' COURSE

The complete two years' course includes freehand and architectural drawing, construction and building materials, the history of ancient, mediæval, and renaissance architecture, modelling, perspective and sciography, graphic statics, engineering, etc.

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The course has now been in existence for six years, and has proved a complete success. It is not intended to supersede pupilage, but to be preparatory for it. It prevents the undoubted waste of time which too often occurs when a student enters an architect's office without possessing any previous knowledge of drawing, construction, and the elements of architectural design. It enables a student who has passed through the course, when entering an office, to understand from the first the drawings he is set to work upon, and to derive the full benefit from seeing works in actual progress.

At the end of the two years the College certificate is granted to those whose attendance has been regular, and whose progress has been satisfactory.

The scheme has the hearty approval of the leading architects practising in Liverpool, who have agreed to shorten the term of pupilage and reduce the ordinary premium for students who have attended the course and have been awarded the College certificate.

For pamphlet giving further particulars of the scheme apply to the Secretary, University College.

COMPLETE TIME TABLE FOR CURRICULUM.

First Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Freehand Drawing	..	10.0-1.0	..	10.0-1.0	..	..	A.L.S.
History of Architecture	..	..	..	..	10.30-1.0	..	A.L.S.
Materials for Construction ..	10.30-1.0	..	..	..	..	..	A.L.S.
Studio Work	2.0-4.30	2.0-4.30	10.0-1.0	2.0-4.30	2.0-4.30	..	A.L.
	..	..	2.0-4.30	..	..	..	
„	2.0-4.30	..	..	2.0-4.30	2.0-4.30	..	S.
Perspective and Sciography ..	..	..	10.0-1.0	..	..	..	S.
*Graphic Statics	..	2.0-4.30	..	..	..	..	S.
Outdoor Sketching	..	..	p.m.	..	..	..	S.

* The Lectures on Graphic Statics in the first year, and Engineering in the second, are delivered by the Professor of Engineering; and those on Timber by the Professor of Botany.

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Second Year Course

Classes	Day and Hour						Term. Autumn, Lent, Summer
	M.	Tu.	W.	Th.	F.	S.	
Freehand Drawing	2.0-4.0	..	..	2.0-4.0	..	..	A. L.
Modelling	..	2.0-4.30	..	..	2.0-4.30	..	A. L.
„	2.0-4.30	..	..	..	2.0-4.30	..	S.
History of Architecture	..	10.0-1.0	..	..	..	..	A. L. S.
Materials and Construction ..	..	..	..	10.0-1.0	..	..	A. L. S.
Engineering	..	10½-11½	..	10½-11½	..	10.0-11.0	S.
*Timber	..	..	..	..	10.0	..	L.
Outdoor Sketching	..	..	p.m.	..	..	..	S.
Studio-Work	10.0-1.0	..	..	..	10.0-1.0	..	A. L. S.
„	..	..	2.0-4.30	..	..	..	A. L.
„	..	..	10.0-1.0	..	..	..	A. S.
„	..	..	10-11.30	..	..	..	L.

The fee for the complete curriculum is £25 for each session of three terms. This admits to all lectures by the Professor of architecture or his Demonstrator, to the architectural studio whenever open, to the lectures on the subjects mentioned in the time table, and to certain classes in the applied art section.

These courses provide for about thirty hours a week for each course, exclusive of the evening classes which the students are expected to attend. The fee for these is included in the composition fee.

The student can himself decide, after consulting with Professor Simpson, whether he will attend the evening architectural classes or those in the applied art section, and devote the time to freehand drawing, modelling, or any of the crafts.

Visits will be arranged from time to time to places and buildings of interest, old and new; sketches or notes of the same to be submitted to the Professor. During the long vacation, between the first and second courses, students are advised to enter a builder's shop, and work with the tools on masons', joiners', and plumbers' work, etc., to join the summer vacation class in the engineering

* The Lectures on Graphic Statics in the first year, and Engineering in the second, are delivered by the Professor of Engineering; and those on Timber by the Professor of Botany.

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workshop, or to spend the time in sketching and studying old work.

Students who have not passed any matriculation examination are recommended, before taking up the two years' course, to devote one year to the subjects for the Preliminary examination of the Victoria University—especially history, pure mathematics, French, German, and elementary mechanics, giving their spare time to freehand and architectural drawing.

All lectures are followed by a class in the studio, during which students are set exercises to work out bearing on the subjects lectured upon. The lectures are illustrated by lantern slides, drawings, and photographs.

The following lectures will be delivered :

History of Architecture (First Year)

Friday, 10.30-1.0.

AUTUMN TERM.—Greek and Roman mouldings and details ; evolution and description of Greek buildings ; their materials and construction ; temple planning.

LENT TERM.—Roman buildings : their plans, materials and construction ; their development and decline. Saxon work and introduction to English Gothic.

SUMMER TERM.—The details and parts of English Gothic buildings : their plans, mouldings and carving ; their construction and design in piers, arches, doorways, windows, towers, spires, etc.

History of Architecture (Second Year)

Tuesday, 10.0-1.0.

AUTUMN TERM.—The evolution of Christian architecture, and the Byzantine work in the East and in Italy. The development of groining, and the constructive reasons which led to the universal adoption of the pointed arch.

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LENT TERM.—Romanesque and Gothic architecture in France, England, Germany, and Italy : a comparison of the plans, proportions and details of the work of the different countries.

SUMMER TERM.—The Renaissance in Italy, France, and England : its development and changes exemplified by the principal buildings erected.

Building Materials and Construction

(First Year)

Monday, 10.30-1.0.

AUTUMN TERM.—Brickwork and masonry : concrete and mortar ; walls, foundations, openings, arches, chimneys, and materials.

LENT TERM.—Carpentry, slating, tiling, and external plumbing ; joints, centres, floors, partitions, roofs ; and the materials, timber, slates, tiles, lead and zinc.

SUMMER TERM.—Iron roofs ; soils and foundations ; fireproof floors, hollow walls, and prevention of damp in buildings, damp courses, cement and rough cast ; stone and concrete stairs ; and the materials, iron, limes, cement, concrete, etc.

Building Materials and Construction

(Second Year)

Thursday, 10.0-1.0.

AUTUMN TERM.—Joinery ; joints, doors, windows, skylights, lanterns, staircases, panelling ; and the materials.

LENT TERM.—Plastering, painting, glazing, and the materials ; shoring, under-pinning and planning.

SUMMER TERM.—Internal plumbing, heating, ventilation, drainage and specifications.

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Perspective and Sciography (First Year)

Wednesday, 10.0-1.0.

SUMMER TERM only.

Simple problems of the perspective of lines, solid figures and circles, and the application of the principles to architectural subjects.

Prizes are awarded at the end of each session in the following subjects: — Design, history of architecture, construction and perspective.

II. CLASSES FOR STUDENTS NOT TAKING THE WHOLE CURRICULUM

Students can join any of the lecture classes mentioned before, namely, history of architecture (courses I and II), building materials and construction (courses I and II), and perspective and sciography.

Fees for each class, for *lecture only* :—One term, £1 ; two terms, £1 10s. ; three terms, £2.

Fees for each class, *for lecture and morning studio class* (10.0-1.0) :—One term, £1 10s. ; two terms, £2 10s. ; three terms, £3 5s.

Students are, however, advised, if they wish to keep up with the work of the class, to take an extra studio class in the afternoon.

Studio classes are held on Mondays, Tuesdays, Thursdays, and Fridays, from 2.0-4.30, and can be joined by students not attending lectures as well as by those who do.

Fees.—For any one of these afternoons a week, £1 a term ; for two afternoons a week, £1 10s. a term, or £4 for the session of three terms.

The studio is also open three evenings a week during the AUTUMN and LENT TERMS only.

Fee.—15s. a term.

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A *Special Design class* for advanced students will also be held on alternate Thursday evenings during the AUTUMN and LENT TERMS, commencing Thursday, October 18, at 7.30.

Fee.—10s. the course.

For full particulars, see Evening Class Syllabus.

For particulars of the classes on graphic statics, engineering, and diseases of timber, see pp. 164, 170, 202.

The following classes are also held in connection with the School of Architecture, for further particulars of which see separate School Syllabus, which can be obtained on application to the Director, Professor SIMPSON, University College.

THE SCULPTURE AND MODELLING STUDIO

Modelling from the Life

Monday, Thursday, 1.30-4.0.

Modelling from the Antique or Casts, or Designing and Modelling Ornament

Monday, Tuesday, Thursday, Friday, 10.0-1.0, and 2.0-4.0.

THE DECORATIVE PAINTING STUDIO

Drawing and Painting from the Life

Draped—Tuesday, Friday; Nude—Monday, Thursday, 10.0-1.0.

Drawing from the Antique Casts

Monday, Tuesday, Thursday, Friday, 10.0-1.0, and 2.0-4.0.

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The Designing of Ornament and Advanced Design

Monday, Tuesday, Thursday, and Friday, 2.0-4.0.
Two courses are held, elementary and advanced.

Drawing and Painting from the Life. (Men only)

Wednesday, 10.0-1.0, and 2.0-4.0.

AUTUMN and LENT TERMS only.

Stained Glass

Monday, Thursday, 2.0-4.30

FEES

FIRST COURSE

Modelling or drawing antique two mornings, and designing of ornament two afternoons, £2 10s. a term.

Modelling or drawing antique four mornings, and any two of the other classes mentioned, except life classes, four afternoons, £3 10s. a term.

Day students in the first course cannot join for less than two days a week.

SECOND COURSE

Drawing life two mornings or afternoons (or modelling life two afternoons), and two afternoons or mornings antique or design, £3 10s. a term.

Life two mornings or afternoons, and antique and design two days, £4 a term.

Life drawing four mornings, £4 a term.

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Stained glass two afternoons, and design or antique two mornings or afternoons, £2 10s. a term.

Stained glass two afternoons, and life two mornings, £3 10s. a term.

Composition Fee, admitting to all the day and evening classes possible, £5 a term.

Drawing from the life (men only, Wednesday class), £1 10s. a term; half fees to professional students.

Drawing from the life two mornings or afternoons, or modelling from the life two afternoons, £2 10s. a term.

Designing of ornament or other design work two afternoons or two mornings, £1 10s. a term.

Stained glass two afternoons, £1 10s. a term.

Free studentships and crafts studentships are awarded.

For further particulars apply to the director, Professor SIMPSON.

EVENING LECTURES

See Evening Syllabus.

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SCHOOL OF COMMERCE

Principal: A. W. W. DALE, M.A.

Chairman of the Committee of the School of Commerce:
P. J. HEMELRYK, Esq.

Hon. Secretaries:
W. HEWITT, Esq., Municipal Offices.
Professor GONNER, University College.

TEACHERS OF THE SCHOOL

Day Classes

French: { C. BONNIER, Ph.D.
P. BERNARD.

German: Professor KUNO MEYER, Ph.D.

Spanish: *Vacant.*

Contemporary History: Professor MACKAY, M.A.

Commercial Geography: Professor GONNER, M.A.

Economics: Professor GONNER, M.A.

Commercial Law: *Vacant.*

Mathematics: Professor CAREY, M.A.

Commercial Bureau:

Commercial Practice	*Vacant.*
Commercial Arithmetic	A. VON ARNIM.
Book-keeping	
Commercial Correspondence	

Science: PROFESSORS AND LECTURERS OF THE COLLEGE.

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Evening Classes

French : C. Bonnier, Ph.D.; E. G. Renault.; P. Bernard.

German : A. Von Arnim.; E. G. Browne, M.A.

Spanish : A. R. Alvarez, M.A.; M. R. Garcia.

Commercial Geography : C. G. Dyall.

Economics : Professor Gonner, M.A.

Commercial Law : E. Stewart Brown, M.A.; W. H. S. Oulton, M.A., LL.M.

Commercial Practice : A. Von Arnim.

Commercial Arithmetic : F. C. Jessop.

Accountancy : Sidney S. Dawson, A.C.A.

The classes of the school are organized under a joint committee consisting of representatives of the College, the City Council, and the Chamber of Commerce.

Day Course

The course extends over two years and is arranged with a view to its being taken up by students on leaving school between 16 and 17 years of age. Evidence of fitness to profit by the instruction will be required.

The subjects of study are as follows, and are obligatory :—

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Subjects	First Year. Hours.	Second Year. Hours.
English—commercial composition, &c. ...	1	—
Modern history	2	—
Commercial geography	2	1
Commercial arithmetic, &c. (including mental calculation and book-keeping	4	3
Commercial practice	3	5
Commercial law	—	2
Economics	—	2
Two modern languages—French, Spanish, German—four hours each	8	8
One of the following—chemistry, engineering, mathematics, biology, physics	3	3
Total	23	23

Students who have attended the full two years' course, and passed satisfactory examinations, will obtain a diploma, which, it is hoped, will receive *substantial* recognition by the commercial community in shortening of apprenticeship, &c.

The Commercial Bureau, in which the more practical commercial classes are conducted, is fitted up as an office, and forms an important feature in the School.

The composition fee for the full course is £25 per session, but a small additional fee is charged to students backward in foreign languages for extra tutorial instruction. For full particulars see special prospectus of the School of Commerce. The Hon. Sec. at University College is Professor Gonner.

Evening Classes

The classes are held between the hours of 7.15 and 9.30. For details see special prospectus.

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EVENING CLASSES

SESSION 1900-1901

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SHORT SYLLABUS OF

EVENING LECTURES AND CLASSES

The following Prospectus contains a brief announcement of the various lectures and classes *so far as already arranged* for the Session 1900-1901. A fuller Syllabus of the Evening Courses is issued one month before the commencement of every term, and can be had on application to the Secretary.

EVENING LECTURES AND CLASSES

The evening courses of the College consist of :—

(1) PUBLIC LECTURES, which will be freely illustrated, where the subject permits, by diagrams and experiments, and adapted to persons anxious to gain general culture or information upon the subjects treated, but unable to enter upon systematic courses of study. They will in all cases aim at sufficient thoroughness and depth to be of value to students who have mastered the rudiments of the subjects treated.

(2) TEACHING CLASSES, in Languages, Mathematics, and Science, at which all who attend will be expected to prepare beforehand for the class, and to do any work prescribed by the Professor conducting the class. It is intended that these classes should be continuous thoughout the year.

As a general rule, a class will not be held for an attendance of less than five students, nor a public lecture delivered to an audience of less than twelve.

For the evening courses, as for the day, the year will be divided into three terms, each of which will consist of ten weeks. The AUTUMN courses will commence on October 8, the LENT on January 14, and

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the SUMMER on April 22. All lectures and classes will be held weekly.

All courses are open to persons of either sex without restriction. The fee, unless otherwise stated in the advertisement of the particular class, will be 6s. for each course, including the registration fee of 1s. Tickets of admission will be issued at the Secretary's Office in the College at all hours when it is open, and during the half hour preceding the commencement of each lecture. All persons attending will be required to be provided with tickets, and to show them at any time when asked for, but admission to the *first* lecture of each course *in the Autumn Term* is free.*

At the termination of each course in which home preparation or periodical papers have formed a part of the work of the class, a simple certificate will be given to all students who have done such work to the satisfaction of the Professor, stating the length and character of the course, and certifying regularity of attendance and work upon the part of students entitled thereto. Except in special cases the certificate will not be given if more than two absences have occurred in a course of ten lectures.

Text-books recommended for the several courses can be procured at the College.

The College Library is open for use as a reading room from 7 to 9.30 p.m. daily (except Saturday) to all students attending evening classes at the College. It is expected that strict silence will be observed. Students are at liberty to use books or magazines belonging to the library, but cannot take them away for home use.

EDWARD RATHBONE PRIZES

The prizes founded by the Rev. J. H. Thom, IN MEMORIAM EDWARD RATHBONE, for the encouragement of *English Literature* and *Philosophy*, are at present connected with the evening classes of the College, and

* Free admission is not given to initial lectures during the Lent and Summer Terms.

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open to students attending regularly the lectures in English Literature, Political Philosophy or Political Economy. The prizes are of the value of £5 or £2 10s., to be expended in books selected by the prizetaker.

The exact terms of competition will be duly announced at the opening lecture of the courses in the subjects specified.

GREEK

Professor : GILBERT A. DAVIES, M.A.

Assistant Professor : P. HEBBLETHWAITE, M.A.

SYNTAX AND COMPOSITION

Junior

Wednesday, 7.15-8.15.

This class is for beginners. Accidence will be taken, rapidly but systematically, from the rudiments; so that a beginner, with a reasonable expenditure of time in private work, may be able to keep up with the class. Accidence will be taught by comment and illustration, all rote learning being left to private application. Easy translation and composition will be taken from the first, side by side with the portion of accidence mastered. The whole of the accidence will be covered in the year.

Text-Books.—Rutherford, *First Greek Grammar;* Underhill, *Easy Exercises in Greek Accidence.*

Senior

Tuesday, 7.15-8.15.

This class will be suitable for those who attended the junior class during the last session. Knowledge of accidence, and some degree of proficiency in easy Greek translation will be assumed, and the time will be given to methodical study of syntax, with practice in easy Greek composition.

Text-Books.—Rutherford, *First Greek Syntax;* Nall, *Exercises on First Greek Syntax;* Sidgwick, *Greek Prose Composition.*

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TRANSLATION

Tuesday, 8.15-9.15.

If a reasonable number of students present themselves, a class will be formed to read the subjects for the London Intermediate or Final B.A.

LATIN

Assistant Professor: P. HEBBLETHWAITE, M.A.

GRAMMAR AND COMPOSITION

Junior

Thursday, 7.15-8.15.

This class is intended for students who have little or no previous acquaintance with Latin. All who attend the class will be expected to prepare written exercises.

Text-Books.—Kennedy, *Shorter Latin Primer*; Ritchie, *Latin Prose Composition.*

Intermediate and Senior

Wednesday, 8.30-9.30.

This class will be suitable for students preparing for the Victoria or London Intermediate and Final examinations. Half the time will be devoted to the study of idiom in selected sentences, half to continuous prose. All who attend the class will be expected to prepare written exercises.

Text-Book.—Bradley, *Arnold's Latin Prose Composition.*

TRANSLATION

Thursday, 8.30-9.30.

If a reasonable number of students present themselves, a class will be formed to read the subjects for the London Intermediate or Final B.A.

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FRENCH

Lecturer : C. BONNIER, PH.D.

Elementary

For French Elementary (Junior I and II), Senior and Commercial classes, see the Syllabus of the Liverpool School of Commerce.

Advanced

Monday, 7.30-8.30.

If required by a sufficient number, an advanced literary course of exercises in essays, composition, and conversation will be arranged for students of various degrees of proficiency, as well as teachers, &c. The course will be entirely conducted in French.

GERMAN

Junior

For German Elementary (Junior and Intermediate) and Commercial classes, see the Syllabus of the Liverpool School of Commerce.

Advanced

GORDON E. BROWNE, M.A.

Wednesday, 7.15-8.15.

For conversation, reading at sight, and oral translation of English into German.

WELSH

Professor KUNO MEYER, Ph.D., M.A.

Thursday, 8.0-9.0.

Lectures will be given on the history of the Welsh

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language, and a number of early and middle Welsh texts will be studied.

Text-Books.—E. Anwyl, *Grammar of the Welsh Language* (Sonnenschein); *Peredur ab Efrawc*, ed. Kuno Meyer.

ITALIAN

Lecturer : Chevalier Londini, D.C.L.

Junior

Friday, 7.15-8.15.

For beginners.

Text Books.—Sauer, *Italian Grammer* ; Rossetti, *Cento aneddoti Italiani.*

Senior

Friday, 8.15-9.15.

Translation and composition of a high standard will be expected from this class, which will be conducted as far as practicable in Italian, and will be exercised in translation at sight from Italian into English, and *vice versâ*. Reading books will be chosen after consultation with the students.

N.B.—Neither of the above classes will be held unless at least *twelve* students present themselves for each.

SPANISH

A. R. Alvarez, M.A.

See the Syllabus of the Liverpool School of Commerce.

ENGLISH LANGUAGE

Lecturer : H. C. Wyld, B.Litt.

Monday, 7.30-8.30.

A. ELEMENTARY PRACTICAL PHONETICS

This course is specially intended for teachers of Modern Languages for whom an elementary knowledge

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of the primary mechanical facts of speech is indispensable. These lectures will include a general survey of speech sounds, with particular reference to the sounds of English, French, and German.

B. OLD ENGLISH

A course of lectures for beginners in Old English will be arranged if sufficient students present themselves.

Intending students are requested to communicate with the Lecturer not later than October 8.

ICELANDIC

Honorary Reader: Rev. J. SEPHTON, M.A.

Tuesday, 7.15-8.15.

The class will read, during the session, the *Saga of Gunnlaug Ormstongue*, and if time permits, portions of *Njála* and *Poetic Edda*.

The Reader in Icelandic will welcome new students at any period of the session and assist them in their early progress in the subject. The Grammar of the Language is useful to all who study the origins and growth of the English language; the literature is invaluable to all who are interested in the mythology, law, history and social life of the Northern Teutonic peoples.

PHONETICS

Honorary Reader: R. J. LLOYD, D.Lit., M.A.

Wednesday, 8.30-9.30.

If a sufficient number of students present themselves, a French Pronunciation class will be held during the AUTUMN and LENT TERMS. The Reader will attend at 8.0 on Wednesday, October 10, to meet intending students.

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EDUCATION

Professor: W. H. WOODWARD, B.A.

Wednesday, 7.45-8.45.

AUTUMN Term.—Locke's *Thoughts on Education*, a subject for the Certificate Examination of the Education Department, 1901.

LENT TERM.—Froebel's *Education of Man*, ed. Herford, a subject for the same examination.

A Syllabus of each course will be issued in the Special Prospectus of the Department of Education in September, 1900.

ECONOMICS

Professor: E. C. K. GONNER, M.A.

Wednesday, 8.30-9.30.

Professor GONNER will deliver, during the AUTUMN TERM, a course of ten lectures on 'SOCIAL GROWTH AND CHANGE IN THE NINETEENTH CENTURY.'

COMMERCIAL GEOGRAPHY

See the Syllabus of the Liverpool School of Commerce.

MATHEMATICS

Professor: F. S. CAREY, M.A.

Assistant Lecturer: W. A. HOUSTON, M.A.

EXERCISE CLASS

Monday, 7.30-8.30.

Professor CAREY will conduct an exercise class throughout the session for students who wish to pursue some branch of Mathematics.

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TRIGONOMETRY

Tuesday, 7.30-8.30.

A course of lectures will be given by Mr. HOUSTON on Elementary Plane Trigonometry.

PRACTICAL PHYSICS

Demonstrator : WALTER H. DERRIMAN.

The Physical Laboratory will be open on Thursday evenings, from 7.0 to 9.0.

The courses of instruction will be of a moderately elementary character, and will be arranged to meet the needs of the students. A class will be formed for those who have not previously worked in a physical laboratory, while students who have already worked through a first year course will be allowed to undertake more difficult experiments.

The courses will be found useful to candidates for the examinations of the London University and the Royal University of Ireland, and to students of technical classes.

As the accommodation is limited, students are advised to apply for admission before the commencement of the course.

Fee.—11s. per Term.

ASTRONOMY

Honorary Reader : W. E. PLUMMER, M.A., F.R.A.S.

Friday, 8.0-9.0, commencing October 5.

The Reader in Astronomy will lecture on Cometary Astronomy, including the determination of orbits and the computation of ephemerides. Those who wish to attend the classes must communicate with the Reader, Liverpool Observatory, Bidston, Birkenhead, at least one week before the first lecture.

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ELECTROTECHNICS

Lecturer : ALFRED HAY, B.Sc., M.I.E.E.

Lecture Courses

AUTUMN TERM

Dynamos and Motors

Tuesday, 7.0-8.0, commencing October 9.

1. General principles. Faraday's and Henry's investigations. Rules for finding amount and direction of E.M.F. induced in any conductor moving in a magnetic field. Amount and direction of force acting on conductor conveying current in a magnetic field.
2. Gramme armatures. Construction of core. Commutator. Calculation of E.M.F. induced in armature.
3. Drum armatures. Winding tables. Methods of making end connections.
4. Mechanical details of armature construction. Sizes and proportions of shaft, spider and core. Self-oiling bearings.
5. Field-magnets. Single and double magnetic circuits. Field windings.
6. Commutation of current in armature coils. Conditions for sparkless running.
7. Armature reactions.
8. Characteristic curves. Effects of changes in air-gap, speed, armature winding and field winding.
9. Motors. Mechanical characteristics.
10. Coupling of dynamos. Parallel running.

LENT TERM

Dynamos and Motors (continued)

Tuesday, 7.0-8.0, commencing January 15.

1. Calculation of ampere-turns required for field excitation.

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2. Multipolar dynamos. Comparison with two-pole machines.
3. Multipolar ring windings
4. Multipolar drum windings
5. Devices for suppressing armature reaction.
6. Mechanical details of multipolar armature construction.
7. Relation of size and speed to output of multipolar armatures. Formula for E.M.F. of multipolar armatures.
8. Types of multipolar field-magnets.
9. Losses and efficiencies. Methods of testing.
10. Analysis of dynamo losses.

SUMMER TERM

A course of ten lectures on some advanced subject, to be announced at a later date, will be given during the Summer Term.

Laboratory Work

The laboratory will be open on Tuesday evenings, from 8.0-9.30, during the AUTUMN and LENT TERMS.

The courses of instruction in the laboratory will include the measurement of resistance, insulation resistance, the use and calibration of electrical measuring instruments, the determination of the magnetic properties of iron, the testing of dynamos, motors, accumulators, and of arc and incandescent lamps.

Students will be permitted to bring home-made machines or instruments to test and calibrate.

Select and advanced students who have worked in the laboratory during previous sessions, and who do not need to attend the lectures, may be admitted to the laboratory one hour earlier (*i.e.*, at 7.0). Such students will be encouraged to carry out experimental work of a more advanced nature than that which is included in the regular laboratory course.

Fee for each course of lectures, 6s.

Fee for one term's laboratory course, 11s.

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ENGINEERING

Professor : H. S. HELE-SHAW, LL.D., F.R.S., M.Inst.C.E.

Assistant Lecturers :

J. W. ANDERSON, Assoc.M.Inst.C.E., M.I.Mech.E.,
ERNEST BROWN, M.Sc.

Lecture-Assistant : J. OKILL.

Workshop Demonstrator and Mechanic : W. DONALDSON.

Wood-Working Instructor : R. GARNER.

PENNY TECHNICAL EVENING LECTURES AND COURSES OF LABORATORY INSTRUCTION

The evening work of the engineering department is carried on, to a great extent, by means of grants from the City Council, and is suitable for—

(1) Professional men.

(2) Advanced students from the technical science classes of the city.

In addition to the general courses mentioned below, a special course of lectures will this year be given by the Professor of Engineering on Road Locomotion by Mechanical means.

The courses of general instruction are, in accordance with the wish of the Technical Committee of the City Council, arranged to cover, as far as possible, the ground of the Honours course on the subjects of Applied Mechanics and Steam of the Science and Art Department.

The subject of Applied Mechanics will be taken by Mr. J. W. ANDERSON, and the subject of Steam by Mr. E. BROWN, in accordance with the detailed syllabus given below.

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(1) ROAD LOCOMOTION BY MECHANICAL MEANS

Prof. H. S. HELE-SHAW, LL.D., F.R.S., M.Inst.C.E.

Friday, 8.0-9.0, commencing October 12.

A course of six lectures will be delivered on the above subject during the AUTUMN Term.

Lecture I. History of the early attempts to introduce mechanical propulsion on roads. The great importance of the subject. Causes of failure. Reason for the revival of the whole question during the last few years.

Lecture II. Resistance of the road. Action of the wheel rolling upon a road under various conditions. Different kinds of roadway. Different kinds of wheels employed by traction engines and motor vehicles. Attempts to make a spring traction wheel. The solid rubber tyre as used for traction engines and heavy motor vehicles. The pneumatic tyre, its theory and its present application to light motor vehicles.

Lecture III. The problem of steering and turning. The inventions of Ackermann, Davis, and others for the steering of motor vehicles. The theory of the subject and practical details of numerous steering arrangements employed with traction engines, motor waggons, and motor vehicles generally. Theory of the differential gear, or jack-in-the-box, required in turning corners when both driving wheels are geared to the shaft. Different types of such differential gearing.

Lecture IV. Motive power for vehicles. Choice of different kinds of motive power. Internal combustion or oil engines. External combustion or steam engines and electric motors. Consideration of each of these types in detail.

The Gas Engine.—(1) Carburettors, (2) ignition, (3) starting (4) governors, (5) balancing, (6) cooling.

Lecture V. Motive power (*continued*). General arrangements of steam engines and boilers on various types of

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motor vehicles. Thornycroft, Lifu, Leyland, Clarkson and Capel, Coulthard, Musker, Simpson and Bodman. Different types of burners for liquid fuel, such as the Longuemare, Lifu, Leyland, Clarkson and Capel, and Musker. Different types of flash boilers illustrated by the Simpson and Bodman, and Musker.

Lecture VI. Gearing and transmission. Chain gearing. Modern improvements in chain gears. The theory and action of a proper design of sprocket wheel for chain. The lubrication and wear of chains for motor wheels. Transmission of power by belt gearing, general unsuitability except for small power. The use of toothed gearing for transmitting power for motor vehicles, and especially of gearing for change of speed. Various types of inventions for changing the speed, involving novel principles, such as the different inventions of Messrs. Lucas, Newton, and Hall. Summary of results arrived at in working on heavy motor vehicles, and general conclusions concerning the engineering features of the problem.

Fees.—Qualified students who present a note from the Director of Technical Instruction (Municipal Offices), free; artizans who have attended the recognized evening classes in the city, 6d.; professional men and others, 6s.

(II) APPLIED MECHANICS

J. W. ANDERSON, Assoc.M.Inst.C.E., M.I.Mech.E.

Tuesday, 7.30-8.30, commencing October 9, throughout the AUTUMN TERM.

Tuesday, 7.30-9.0, commencing January 15, throughout the LENT TERM.

The subject will be treated in a manner suitable for students who have passed the advanced Science and Art examination in machine design, building construction, and naval architecture, also for those reading for the examination of the Institution of Civil Engineers, and for professional men generally.

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AUTUMN TERM.—The work during this term will consist of lectures in the engineering lecture hall on the following subjects :—Stress, strain, resilience, moduli of elasticity, Poisson's ratio, repeated stress, fatigue of materials, Wöhler's researches, testing machines, methods of testing metals, timber, bricks, stones and cements, bending, torsion, struts.

LENT TERM.—This term will be devoted to experimental work in the laboratory with the 100-ton and other testing machines, illustrating the work covered in the lectures.

Fees.—Qualified students who present a note from the Director of Technical Instruction (Municipal Offices), free ; artizans who have attended the recognized evening classes in the city, 10d. ; professional men and others, 6s. for each course.

(III) STEAM

E. BROWN, M.Sc.

(1) Lectures

Wednesday, 8.0-9.0, commencing October 10, throughout the AUTUMN TERM.

The course will consist of ten lectures, the subject matter of which will be :—

1. Properties of steam.
2. Behaviour of steam in the cylinder.
3. Chief sources of loss in the cylinder.
4. Efficiency of steam engines working under different conditions.
5. Calculation of the probable I.H.P. in a steam engine cylinder.
6. Details of land, marine, and locomotive engines.

Fees.—Qualified students, who present a note from the Director of Technical Instruction, free ; working men, 10d. ; professional men, 6s.

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(2) Practical Work

Monday, 7.30-9.30, commencing October 8, throughout the AUTUMN TERM.

The first two or three evenings will be devoted to lectures describing the method of carrying out a scientific engine and boiler trial, and also the method of casting up the heat account. The remainder of the course will be spent in the laboratory, where the students will undertake trials of the marine engine and boiler. The engine will be run triple, compound, and single expansion, jacketed and unjacketed, condensing and non-condensing, each student taking a different measurement each evening. The data obtained in the laboratory will be given to each student, who will be expected to work out all the results and cast up the heat account.

(IV) THEORY OF MACHINE DESIGN

E. BROWN, M.Sc.

Wednesday, 8.0-9.0, commencing January 16, throughout the LENT TERM.

The course will consist of ten lectures, and will be mainly devoted to the theory of the design of machine details, including :—

Land and marine engine shafts. Lubricated bearings. Columns and struts. Piston rods and connecting rods. Thick cylinders. Fly-wheels, spur-wheels, and belts.

Only those students will be admitted free to the lectures and laboratory who have passed satisfactorily through a course of scientific instruction at some centre, and have obtained either two advanced certificates (Science and Art) in Steam, Applied Mechanics or Machine construction and drawing, and who present a note to that effect from the Director of Technical Instruction (Municipal Offices). *All other students will have to pay a fee of ten shillings.* In the event of more students attending

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than can be conveniently taken in the laboratory, preference will be given to students from the Liverpool School of Science. Students taking this class are strongly advised to take the course of lectures on Steam.

SURVEYING—ELEMENTARY AND ADVANCED

In the SUMMER TERM there will be elementary and advanced courses of surveying conducted by Mr. BROWN.

Full particulars of these classes will be published in the Summer Term Evening Class Prospectus, and otherwise advertised before March.

TECHNOLOGICAL CHEMISTRY

Students living at St. Helens, Widnes, and other places at a distance, can apply to their respective District Councils for payment of railway fares in attending some of the following classes.

PRACTICAL CLASS

Professor : J. CAMPBELL BROWN, D.Sc.

Tuesday, 7.15-8.45.

A practical class in Quantitative Analysis, mainly volumetric, but including the principles of gravimetric analysis, will be held on Tuesday evenings, from 7.15-8.45. Most of the apparatus required will be lent by the College, but students may have to supply a few inexpensive things for themselves.

Students entering for this class will be required to have some acquaintance with elementary chemistry, and to satisfy the Professor that they have done some practical manipulation.

Fee.—11s.

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COAL TAR HYDROCARBONS AND THEIR DERIVATIVES

CHAS. A. KOHN, M.Sc., Ph.D.

AUTUMN TERM. Monday, 7.30-8.30.

The course will consist of ten lectures, illustrated by experiments and specimens. They will deal with the chief cyclic hydrocarbons, such as benzene and its homologues, naphthalene, anthracene, and their derivatives; indigo, antipyrine, pyridine and quinoline. The subject will be treated both from a scientific and a technological standpoint, and a knowledge of elementary organic chemistry will be assumed.

Fee.—6s.

FUEL

T. LEWIS BAILEY, Ph.D.

LENT TERM. Monday, 7.30.

The course will consist of six lectures of one hour each, and four evenings' practical work (two hours each evening).

The lectures will be devoted to a discussion of the nature and properties of the various classes of fuel; and the practical work will include the estimation of carbon, hydrogen, sulphur and ash in coal, and the determination of calorific values by means of the calorimeter.

The lectures will be of an elementary character, but some rudimentary knowledge of chemistry will be assumed.

Fee.—11s.

BOTANY

Assistant Lecturer and Demonstrator: F. J. LEWIS.

AUTUMN AND LENT TERMS. Tuesday, 7.15-8.15.

The Assistant Lecturer will give a course of lectures on Ferns and Flowering Plants, followed by short demon-

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strations. The life history of types such as *Aspidium*, *Scilla*, and *Ranunculus* will be treated in detail. In addition, several lectures will be devoted to the general anatomical features of leaf, stem, and root in these types, with special reference to their functions. The demonstrations after the lectures will provide macroscopic and microscopic illustrations of the salient features discussed. This course will include the fundamental requirements of elementary and intermediate classes, and be specially adapted for junior pharmaceutical students. No knowledge of Botany will be assumed.

Fee.—11s. for the course.

SUMMER TERM. Tuesday, 6.30-8.30.

The Demonstrator will hold a practical class at which students may investigate for themselves the plants discussed in the junior lectures. Students will practise dissection, section cutting and mounting, and are expected to record their investigations by means of diagrams and drawings.

Fee.—11s.

GEOLOGY

Lecturer : J. LOMAS, A.R.C.S., F.G.S.

Wednesday, 7.0-8.0.

During the AUTUMN and LENT Terms lectures will be given on Stratigraphical Geology.

In the SUMMER Term a class in Practical Geology will be held.

If found advisable, a special class will be held to assist students reading for London or Royal Irish University degrees.

Excursions will be held at intervals, when students will be instructed in methods of Field Geology.

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COMMERCIAL LAW

W. H. S. OULTON, M.A., LL.M.

Carriage of Goods by Land and Sea

AUTUMN TERM

Friday, 8.0-9.0, commencing October 12.

Mr. OULTON will deliver a course of eight weekly lectures at University College on CARRIAGE OF GOODS BY LAND AND SEA.

This course is primarily intended for bank officials, accountants, and young business men. A detailed syllabus will be issued towards the end of September.

WOOD-WORKING CLASS

JOINERY

Mr. R. GARNER.

Monday, 7.15-9.15.

An amateur class in joinery will be held throughout the session. All the required appliances, bench, tools, and timber for practice work, are provided for members of the class. Instruction will be given in ordinary wood joints, framing and more advanced joinery, such as circular moulding, raking moulds, and the like. Any who have attained sufficient skill will be allowed to undertake pieces of work (of moderate dimensions) for their own use, but in this case the timber and other materials must be paid for separately.

The number will be limited to twenty-five.

Fee.—One term, 15s.; two terms, £1 2s. 6d.; three terms, £1 10s.

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CITY OF LIVERPOOL SCHOOL OF ARCHITECTURE AND APPLIED ART

ARCHITECTURE

Professor: F. M. SIMPSON.

Studio Work

Monday, Tuesday, Friday, 7.0-9.0.

AUTUMN and LENT TERMS only.—Drawing out examples of old work. Construction and design.

Fee.—15s. a Term.

Design Class

AUTUMN and LENT TERMS only.

The special design class for advanced students will be continued on the same lines as in previous years. The class will meet fortnightly on Thursdays for ten evenings at 7.30, commencing Thursday, October 18. At each meeting the designs submitted will be criticised, and a fresh subject announced for next time, a short explanation of the requirements of the subject being given by the Professor. Students will be required to forward their designs to the College *before mid-day* on each alternate Thursday. Those designs which are sufficiently finished will be initialled, and students will be allowed to take these away, and work on them further. The designs submitted may be in pencil or ink, and coloured or not, as students prefer. The nature of each subject set will be varied as much as possible, so as to embrace design and

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practical problems. At the end of the session one or more prizes (according to the number and quality of the works submitted) will be awarded to the best sets of at least four designs each. Students who are not very far advanced are advised to join also the evening studio classes on Mondays, Tuesdays, and Fridays, and work out their designs in the studio. On some of the evenings a special visitor will set the subject and criticise the drawings submitted. The following have kindly consented to act in this capacity :—Mr. Henry Hartley, Mr. E. A. Ould, and Mr. W. E. Willink.

Fee.—10s. for the two terms.

THE CRAFTS SCHOOL

Modelling from the Life

Mr. CHAS. J. ALLEN.

Monday, Tuesday, Thursday, Friday, 7.0-9.0.

Fee.—15s. per term ; half fees to artizans.

Modelling from the Antique and Modelling Architectural Ornament

Mr. CHAS. J. ALLEN.

Monday, Tuesday, Thursday, Friday, 7.0-9.0.

Fee.—10s. per term ; half fees to artizans.

Drawing from the Antique and the Cast

Mr. HERBERT JACKSON.

Monday, Tuesday, Thursday, Friday, 7.0-9.0.

Fee.—10s. per term ; half fees to artizans.

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Decorative Design

Mr. J. HERBERT MCNAIR.

Monday, Tuesday, Thursday, Friday, 7.0-9.0.

Fee.—10s. per term ; half fees to artizans.

Drawing from the Life (Men only)

Mr. HERBERT JACKSON.

Monday, Tuesday, Thursday, Friday, 7.0-9.0.

Studies of nude and draped figures.

Fee.—15s. per term ; half fees to artizans.

Wood Carving

Mr. FRANK H. NORBURY.

Tuesday, Friday, 6.30-9.0.

Fee.—10s. per term ; 2s. 6d. to artizans.

Brass and Copper Work

Mr. R. LL. B. RATHBONE.

Monday, Thursday, 6.30-9.0.

Fee.—10s. per term ; 2s. 6d. to artizans.

Wrought Iron Work

Mr. J. PLATT.

Tuesday, Friday, 6.30-9.0.

Fee.—10s. per term ; 2s. 6d. to artizans.

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Stained Glass

Mr. J. H. McNAIR and Mr. R. W. WARRINGTON.

Tuesday, Friday, 7.0-9.0.

Fee.—10s. per term ; 2s. 6d. to artizans.

Furniture and Fittings Construction

Mr. J. PARKINSON AND Mr. BROWBILL.

Wednesday, 7.15-9.15.

AUTUMN and LENT TERMS only.

Fee.—2s. a term.

Furniture and Fittings Design

Mr. J. HERBERT McNAIR.

Monday, 7.0-9.0.

Fee.—5s. a term ; 2s. to artizans.

All the necessary materials and tools (except modelling tools, pencils, paper, &c.) are provided in the evening classes.

Composition Fees.—Two evenings' drawing or modelling from the life, and two evenings of any other class, 15s. a term. Four evenings devoted to any two classes (except life classes), 10s. a term ; half fees to artizans.

For list of scholarships, free studentships, prizes, and all other particulars, apply to the Director, Professor SIMPSON, University College.

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NATURAL HISTORY

Professor: W. A. HERDMAN, D.Sc., F.R.S.

JUVENILE CHRISTMAS LECTURES

PROFESSOR HERDMAN will give a course of three lectures and a Museum Demonstration, on some of the more attractive parts of Natural History, during next Christmas holidays. The course is for boys and girls, for whom the best places will be kept: adults will also be welcome, so far as room permits.

The lectures will be given in the Zoology Theatre of University College (Ashton Street entrance) on Thursday, December 27, Saturday, December 29, and Monday, December 31, 1900, at 11.0 a.m. each day. At the conclusion of the second lecture, Professor Herdman will give a Demonstration on the Collections now on view in the Museum of Zoology.

Pictures and diagrams will be shown at the lectures by the electric lantern, and there will be specimens and microscopic objects to look at. Each lecture will begin at eleven precisely and last for one hour.

Tickets for the course must be obtained beforehand from the Secretary, University College, Liverpool. Each ticket will admit three persons irrespective of age, and will cost 21s. There will be no admission to single lectures, but single tickets for the course may be obtained at 10s. each.

The front seats will be kept for boys and girls under fifteen till five minutes to eleven each day.

The FIRST lecture will be on FISHES, WHALES, and some EXTINCT MONSTERS.

The SECOND lecture will be on INSECTS—their life-histories, instincts and mimicry.

The THIRD lecture will be on CHALK and FLINT, ROCKS, and CORAL ISLANDS.

A more detailed outline of the subjects to be discussed in the lectures will be issued in December.

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EXAMINATION PAPERS

FOR THE

ENTRANCE SCHOLARSHIPS, MAY, 1900

GREEK

1. Translate :—

Τοῦ δ' ἐπιγιγνομένου θέρους περὶ σίτου ἐκβολὴν Συρακοσίων δέκα νῆες πλεύσασαι καὶ Λοκρίδες ἴσαι Μεσσήνην τὴν ἐν Σικελίᾳ κατέλαβον, αὐτῶν ἐπαγαγομένων, καὶ ἀπέστη Μεσσήνη Ἀθηναίων. ἔπραξαν δὲ τοῦτο μάλιστα οἱ μὲν Συρακόσιοι ὁρῶντες προσβολὴν ἔχον τὸ χωρίον τῆς Σικελίας καὶ φοβούμενοι τοὺς Ἀθηναίους μὴ ἐξ αὐτοῦ ὁρμώμενοί ποτε σφίσι μείζονι παρασκευῇ ἐπέλθωσιν, οἱ δὲ Λοκροὶ κατὰ ἔχθος τὸ Ῥηγίνων, βουλόμενοι ἀμφοτέρωθεν αὐτοὺς καταπολεμεῖν. καὶ ἐσεβεβλήκεσαν ἅμα ἐς τὴν Ῥηγίνων οἱ Λοκροὶ πανστρατιᾷ, ἵνα μὴ ἐπιβοηθῶσι τοῖς Μεσσηνίοις, ἅμα δὲ καὶ ξυνεπαγόντων Ῥηγίνων φυγάδων, οἳ ἦσαν παρ' αὐτοῖς· τὸ γὰρ Ῥήγιον ἐπὶ πολὺν χρόνον ἐστασίαζε, καὶ ἀδύνατα ἦν ἐν τῷ παρόντι τοὺς Λοκροὺς ἀμύνεσθαι, ἢ καὶ μᾶλλον ἐπετίθεντο. δηώσαντες δὲ οἱ μὲν Λοκροὶ τῷ πεζῷ ἀπεχώρησαν, αἱ δὲ νῆες Μεσσήνην ἐφρούρουν· καὶ ἄλλαι αἱ πληρούμεναι ἔμελλον αὐτόσε ἐγκαθορμισάμεναι τὸν πόλεμον ἐντεῦθεν ποιήσεσθαι. THUC. iv, 1.

2. Translate :—

εἷς μου λόγος σοι πάντα σημαίνει τάδε·
ἐπεὶ γὰρ ἀλλήλοισιν ὁπλίτην στρατὸν
κατὰ στόμ' ἐκτείνοντες ἀντετάξαμεν,
ἐκβὰς τεθρίππων Ὕλλος ἁρμάτων πόδα
ἔστη μέσοισιν ἐν μεταιχμίοις δορός.
κἄπειτ' ἔλεξεν, ὦ στρατήγ', ὅς Ἀργόθεν
ἥκεις, τί τήνδε γαῖαν οὐκ εἰάσαμεν;
καὶ τὰς Μυκήνας οὐδὲν ἐργάσει κακὸν
ἀνδρὸς στερήσας· ἀλλ' ἐμοὶ μόνος μόνῳ
μάχην συνάψας, ἢ κτανὼν ἄγου λαβὼν

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τοὺς Ἡρακλείους παῖδας, ἢ θανὼν ἐμοὶ
τιμὰς πατρῴους καὶ δόμους ἔχειν ἄφες.
στρατὸς δ' ἐπῆνεσ', ἔς τ' ἀπαλλαγὰς πόνων
καλῶς λελέχθαι μῦθον ἔς τ' εὐψυχίαν.
EUR., *Heracl.* 799-812.

3. Give the accusative singular and dative plural of πόλις, ἐλπίς, λέων, λειμών, χρυσοῦς, προσφιλής. Compare ταχέως, μάλα, πολύς, εὔνους.

4. Write out the present subjunctive active of δικαιόω, the second aorist optative active of δίδωμι, and the pluperfect indicative passive of γράφω.

Give the principal parts of συμβαίνω, καταπίπτω, διανέμω, ἀπέρχομαι.

Parse ἀπήλασαν, φθάσειαν, διαφθεῖραι, ὑποσχομένων.

5. What are the principal uses of the optative mood in Greek?

6. With what cases and in what senses are the prepositions διά, ἐπί, πρός, used?

7. (*a*) Where were Peiræus, Corinth, Ephesus, Naxos, Elis?

(*b*) Who were Herodotus, Themistocles, Euripides, Pericles, Brasidas?

8. Translate into Greek :—

(*a*) They took care to terrify the enemy.

(*b*) Socrates asked whether it was needful to teach virtue or not.

(*c*) May I die sooner than forget my country!

(*d*) Nothing prevents you from telling the king this.

(*e*) Before he went away he bought a pig for a drachma.

(*f*) Affairs were now in a very awkward situation. The king had given no intelligence of his intentions to his ministers, and they were at a loss to understand the sudden change which had taken place in the attitude of the Scots. Mutual distrust was rife, and the most serious consequences might have ensued, had not Buckingham arrived in the nick of time with messages from his royal master.

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LATIN

1. Translate into Latin Prose :—

There was rather, they said, reason for hurry than for delay. Why should the new General's loitering and mutinous troops, arriving at the eleventh hour, share in the triumph and the booty? No one knew the country better than their own tried leader, a native of those parts, civil Governor of the Province. Cowardly motives alone could sway him if he now held them back in the very hour of victory. Inflamed beyond endurance by these taunts, feeling his pride of country touched to the quick, and willing to show that a Netherlander would lead wherever Spaniards dared to follow, Aremberg allowed himself to commit the grave error for which he was so deeply to atone.

2. Translate into English :—

(a) Te bellare decet terra, Messala, marique,
Ut domus hostiles praeferat exuvias :
Me retinent vinctum formosae vincla puellae,
Et sedeo duras ianitor ante fores.
Non ego laudari curo, mea Delia : tecum
Dum modo sim, quaeso segnis inersque vocer.
Te spectem, suprema mihi cum venerit hora,
Te teneam moriens deficiente manu.
Flebis et arsuro positum me, Delia, lecto,
Tristibus et lacrimis oscula mixta dabis.
Flebis : non tua sunt duro praecordia ferro
Vincta, nec in tenero stat tibi corde silex.
Illo non iuvenis poterit de funere quisquam
Lumina, non virgo, sicca referre domum.
Tu Manes ne laede meos, sed parce solutis
Crinibus et teneris, Delia, parce genis.

(b) Alexander ab Hammone rediens, ut ad Mareotem paludem, haud procul insula Pharo sitam, venit, contemplatus loci naturam, primum in ipsa insula statuerat urbem novam condere. Inde, ut apparuit magnae sedis insulam

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haud capacem, elegit urbi locum, ubi nunc est Alexandria, appellationem trahens ex nomine auctoris. Complexus quicquid loci est inter paludem et mare, octoginta stadiorum muris ambitum destinat.

3. Distinguish, giving examples of their use, the following words :—

(*a*) quisque, quisquam, quisquis, ullus, unusquisque.

(*b*) video, cerno, conspicor, intueor.

4. Translate the following phrases, and explain any difficulties in the cases :—(1) consili expers ; (2) nec me animi fallit ; (3) quid nostra id refert ? (4) reus iniuriarum ; (5) os humerosque deo similis.

5. Scan the first six lines of the piece of poetry set in Question 2, and state the special rules of the Pentameter in Latin poetry.

6. Translate into Latin :—

(*a*) I am persuaded that what you say is true.

(*b*) I will conceal my plan from the Romans.

(*c*) I have sold my goods at a large price.

(*d*) When they had said this they stopped.

(*e*) He declares that the town will not be taken.

7. Give the most important rules for the mood of the verb in conditional clauses in Latin. Explain more particularly the mood of the verb in the following sentences :—

(*a*) excitate eum, si potestis, ab inferis.

(*b*) si es Romae, vix enim puto, sin es.

(*c*) si scieris velle aliquem imprudentem super aspidem adsidere, improbe feceris, nisi monueris ne assidat.

8. Write a brief criticism of any work of any Latin poet that you have read, and illustrate your answer by quotations.

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FRENCH

I. Translate into English :—

(a) M. de La Bruyère venait presque journellement s'asseoir chez un libraire nommé Michallet, où il feuilletait les nouveautés et s'amusait avec une enfant fort gentille, fille du libraire, qu'il avait prise en amitié. Un jour, il tire un manuscrit de sa poche et dit à Michallet : 'Voulez-vous imprimer ceci ? (c'étaient *Les Caractères).* Je ne sais si vous y trouverez votre compte ; mais, en cas de succès, le produit sera pour ma petite amie.' Le libraire, plus incertain de la réussite que l'auteur, entreprit l'édition ; mais à peine l'eut-il exposée en vente qu'elle fut enlevée et qu'il fut obligé de réimprimer plusieurs fois ce livre, qui lui valut deux à trois cents mille francs. Telle fut la dot imprévue de sa fille, qui fit dans la suite le mariage le plus avantageux.

(b) Sans partager ce culte aveugle pour le sol de la Grèce défigurée par l'esclavage, Lascaris voulut aussi se rapprocher de son infortunée patrie. Après avoir rempli à Florence, à Rome, à Mantoue, cette noble tâche de multiplier et de répandre les sciences et la philosophie de la Grèce, quand il vit une génération nouvelle se former autour de lui, quand il fut assuré que l'inestimable dépôt conservé par ses efforts était désormais acquis au genre humain, malgré la faveur des républiques et des princes d'Italie, il revint en Sicile. Il préféra cette contrée pour son dernier asile, parce qu'il y recevait plus vite des nouvelles de la Grèce, et qu'il y pouvait recueillir par intervalle, quelques malheureux compatriotes échappés à l'oppression des barbares. La civilisation de la Sicile était toujours imparfaite et grossière, les arts de la vie presque entièrement négligés, les sciences inconnues, l'usage du papier fort rare.

II. Translate into French :—

(a) The Duke of Richelieu to the end of his life hated the philosophers as a sect, not for those parts of

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their system which a good and wise man would have condemned, but for their virtues, for their spirit of free inquiry, and for their hatred of those social abuses of which he was himself the personification. But he, like many of those who thought with him, excepted Voltaire from the list of proscribed writers. He frequently sent flattering letters to Verney. He did the patriarch the honour to borrow money of him, and even carried this condescending friendship so far as to forget to pay the interest. Voltaire thought that it might be in his power to bring the Duke and the King of Prussia into communication with each other. He wrote earnestly to both, and he so far succeeded that a correspondence between them was commenced.

(b) 1. Come with me.
2. He is alone ; his father is dead.
3. You imagine that we are too rich.
4. Why do you laugh no longer ?
5. Will you come and play in the garden ?
6. Will you see the new doll that my god-mother gave me ?
7. What are you doing there ?
8. Do you like music ?
9. Is there no more room in the hall ?
10. Here you are at last !
11. I have done no harm.
12. Good-bye, I shall not forget you.

III. Grammar.

1. What is the rule for the formation of the plural of nouns in *al*, *ail*, and *ou* ? Give instances and exceptions.

2. Give instances of *three* adjectives that have a different meaning according to their position before or after the noun.

3. What are the adverbs formed from the adjectives *cruel*, *net*, *fou*, *sec*, *faux*, and *grave* ?

4. Give the third person singular of the present indicative, and of the present subjunctive of *aller*, *vouloir*, *rompre*, *venir*, *plaire*, and *croître*.

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5. Give the first person plural of the imperfect indicative, and of the future of the verbs: *il crie, je diffère riant, il ferait, vécu,* and *qu'il puisse.*

GERMAN

1. Translate into English :—

(*a*) Am Morgen des neunzehnten Juni herrschte eine dumpfe Stimmung in Queretaro, selbst die rohen Soldaten Escobedo's unterhielten sich nur flüsternd. Schon um sechs Uhr Morgens war die zur Vollstreckung des Urteils bestimmte Ebene im Osten der Stadt mit Tausenden von Menschen bedeckt. Um sieben Uhr verliessen die Gefangenen ihre Zellen. Für jeden von ihnen war ein besonderer von starker Eskorte umgebener Wagen bestimmt. Die drei Wagen trafen auf dem Hauptplatze zusammen und fuhren dann, von einer ungeheuren buntgemischten Volksmenge begleitet, nach dem Richtplatze. Selbst in den Augen der Halbwilden sah man Thränen, die Frauen schluchzten, die Männer senkten die Blicke und sprachen nur leise mit einander. Nur die Soldaten marschierten mit sorgloser, fast triumphierender Miene einher. Ein schmerzliches Lächeln umspielte die festgeschlossenen Lippen des Kaisers. Die eine bleiche Hand strich den langen schönen Bart, die andere lag ruhig auf dem Polster des Wagens.

(*b*) In allen Himmelsstrichen leisten die Gräser mit hohem Halme den Menschen im Naturstand mancherlei Dienste. Die Griechen sagten mit Recht, das Rohr sei ein Mittel gewesen zur Unterjochung der Völker, weil es Pfeile liefere, zur Milderung der Sitten durch den Reiz der Musik, zur Geistesentwickelung, weil es das erste Werkzeug geboten, mit dem man Buchstaben geschrieben. Diese verschiedenen Verwendungsarten des Rohrs bezeichnen gleichsam drei Abschnitte im Leben der Völker. Die Horden am Orinoco stehen unläugbar auf der untersten Stufe einer beginnenden Kulturentwicklung. Das

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Rohr dient ihnen nur zu Krieg und Jagd und Pans Flöte sind auf jenen fernen Ufern noch keine Töne entlockt worden, die sanfte, menschliche Empfindungen wecken können.

(*c*) Der Astrolog hatte sich beurlaubt, und Wallenstein war zu Bette, als Hauptmann Deveroux mit sechs Hellebardierern vor seiner Wohnung erschien, und von der Wache, der es nichts ausserordentliches war, ihn zu einer ungewöhnlichen Zeit bei dem General aus und eingehen zu sehen, ohne Schwierigkeit eingelassen wurde. Ein Page, der ihm auf der Treppe begegnet, und Lärm machen will, wird mit einer Pike durchstochen. In dem Vorzimmer stossen die Mörder auf einen Kammerdiener, der aus dem Schlafgemach seines Herrn tritt, und den Schlüssel zu demselben soeben abgezogen hat.

2. Translate into German :—

As soon as the sun arose, all their boats were manned and armed. They rowed towards the island with their colours displayed, with warlike music, and other martial pomp. As they approached the coast, they saw it covered with a multitude of people, whom the novelty of the spectacle had drawn together, whose attitudes and gestures expressed wonder and astonishment at the strange objects which presented themselves to their view. Columbus was the first European who set foot on the new world which he had discovered. He landed in a rich dress, and with a naked sword in his hand. His men followed, and, kneeling down, they all kissed the ground which they had so long desired to see. They next erected a crucifix, and prostrating themselves before it returned thanks to God for having conducted their voyage to such a happy issue. While thus employed they were surrounded by many of the natives, who gazed in silent admiration upon actions which they could not comprehend, and of which they could not foresee the consequences.

3. Give the derivation of *Flügel, Geschichte, Bündel, irden, fressen.* Form diminutives of *Haken, Taube, Bach.*

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State the gender of *Irrtum*, *Geduld*, *Gebrauch*, *Leim*, *Stahl*, *Kalb*.

4. Give the perfect participle of *handhaben*, *bemitleiden*, *anerkennen*, *frühstücken*. Give the German for :— He is anything but rich ; the sooner the better ; I shall not be able to come ; we have succeeded well ; remind me of it ; nothing better ; nobody else ; few Germans.

ENGLISH ESSAY

Write an Essay on one of the following subjects :—

(1) The Greek and Roman civilizations compared.
(2) Shakespeare's Historical Plays.
(3) The scientific applications of Photography.
(4) Ghosts.

ENGLISH HISTORY

Not more than FIVE *questions are to be attempted.*

1. Describe the chief features in the Roman occupation.

2. Give an account of the rise and progress of the kingdom of Northumbria.

3. Illustrate the policy and work of the Norman kings.

4. Show from the lives of Becket and Langton the claims, position, and influence of the Church.

5. Trace how the Great Council became Parliament.

6. What were the chief points of difference between the political aims of Richard II and Henry IV ?

7. Give an account of the condition of England in the last half of the fifteenth century.

8. Note the chief ecclesiastical changes under Henry VIII.

9. Sketch Queen Elizabeth's relations with Spain.

10. Write an account of Cromwell as Lord Protector.

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11. Explain the chief Parliamentary measures under William III.

12. Sketch the careers of Clive and Warren Hastings. Add maps illustrative.

ARITHMETIC AND ALGEBRA

(Logarithmic Tables are supplied.)

1. Multiply 345.79 by 24.31 by addition without using the multiplication table.

2. Find $\sqrt{14}$ and $\sqrt{7}$ correct to four places of decimals, and show that the quotient of your results is 1.414...using contracted methods of division.

3. A man invests £2,555 partly in $3\frac{1}{2}$ per cent. stock at 97 and partly in $4\frac{1}{2}$ per cent. stock at 110, and his income is £92 13s. 6d. when income tax at 12d. in the £ has been deducted; how did he divide his investment?

4. A cubical box, whose exterior side is 4 ft., is made of 3 inch material, find the price of lining it at 1s. 3d. per square foot; also find its weight, given that one cubic foot of the material weighs 15 lb. 3 oz.

5. Expand

$$\frac{3 + 3x - 10x^2 + x^5}{(1-x)^2}$$

in ascending powers of x by division, giving the first five terms.

Also find the general term; and show that one term, and only one, of the series vanishes.

6. Solve the equations

(1) $\dfrac{x+p}{x-q} + \dfrac{x-p}{x+q} = 3.$

(2) $x^2 - 2(a^2 + b^2)x + a^4 + a^2b^2 + b^4 = 0$

(3) $\sqrt{2}x + \sqrt{3}y - z = 2\sqrt{2},$

$x - y - (\sqrt{3} - \sqrt{2})z = 3,$

$-\sqrt{3}x + \sqrt{2}y + 2z = -3(\sqrt{3} + 2).$

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7. Find the real quadratic factors of

(1) $x^4 - 2x^2 - 1$.

(2) $x^4 + 2x^2 + 4$.

Find also correct to two places of decimals each of the real roots of

$$x^4 - 2x^2 - 1 = 0.$$

8. Explain the reasoning upon which is based the rule for finding cube root; investigate a similar rule for finding fifth root.

Extract the square root of

$$\frac{x^6 - 2x^5 + 5x^4 - 4x^3 + 15x^2 - 18x + 27}{x^4 - 4x^3 + 27}.$$

9. Define the logarithm of a number to base 10.

The differences in a table of logarithm decrease as the number increases. Illustrate this fact and prove it.

Interest at $2\frac{1}{2}$ is paid quarterly; find the amount of £1,200, invested at compound interest, at the end of 20 years.

10. Find the number of different distributions that can be made of n different articles amongst m persons.

In how many ways may 6 loaves of bread be distributed amongst A, B, C, D, E?

11. Trace the changes in magnitude of $x + \frac{1}{x}$ as x varies from a large negative to a large positive value.

Sketch the graphs of—

(1) $m^2x + \frac{n^2}{x}$.

(2) $x^2 + 2mx - n^2$.

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GEOMETRY AND TRIGONOMETRY

(Logarithmic Tables are supplied.)

1. Show how to make an angle equal to a given plane angle.

Give geometrical constructions for angles equal to the third, the fourth, and the fifth parts of a right angle.

2. If AD, the perpendicular from the right angle A of a right-angled triangle, meets the base BC in D, show that the square on AB is equal to the rectangle contained by BD and BC.

Prove I. 47.

3. If a straight line AB is bisected at C and P is any point, then the sum of the squares upon AP, BP is equal to twice the sum of the squares upon AC and CP.

Prove that the sum of the squares upon the sides of a parallelogram is equal to the sum of the squares upon its diagonals.

4. From any point P of a circle a tangent PT is drawn and a chord PQ; prove that the angle QPT is equal to the angle in the alternate segment of the circle.

Two circles cut in A and B and from any point P of one PA and PB are drawn and produced, if necessary, to cut the second circle in C and D; prove that CD is parallel to the tangent at P.

5. Show how to inscribe a circle within a given triangle.

Find the locus of the centre of a circle inscribed in a triangle of which the base and the opposite angle are given.

6. Prove that similar triangles are in the duplicate ratio of their homologous sides.

Assuming that the volumes of right prisms on equal bases are in the ratio of their heights, prove that the volumes of cubes are in the triplicate ratio of their edges.

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7. Prove that

$$\sin A = \pm \sqrt{(1 - \cos^2 A)} = \pm \frac{\tan A}{\sqrt{(1 + \tan^2 A)}}.$$

How are the ambiguities in sign settled ?

Given that $\tan A = 2$ and that A is an angle in the third quadrant, find the other trigonometrical functions.

8. Prove that

(1) $\sin (A + B) \sin (A - B) = \sin^2 A - \sin^2 B.$

(2) $-\sin (A+B+C) + \sin (-A+B+C) + \sin (A-B+C) + \sin (A + B - C) = 4 \sin A \sin B \sin C.$

9. Define a radian ; and find the number of degrees in an angle whose circular measure is given.

Find the number of seconds in the greatest angle subtended by a six-foot man at a distance of five miles.

10. Prove that in a triangle

(1) $\tan A + \tan B + \tan C = \tan A \tan B \tan C.$

(2) $\cot^2 \frac{1}{2} A = \frac{s(s - a)}{(s - b)(s - c)}.$

(3) $\frac{r}{R} = 4 \sin \frac{1}{2} A \sin \frac{1}{2} B \sin \frac{1}{2} C.$

11. A pillar 30 feet high is 36° N. of E. from A, and its altitude is 10° ; from B it is 47° N. of W. and B is due E. of A. Find the distance from A to B.

PHYSICS

1. What is the connection between heat and work ? An ounce of coal burnt in a furnace enables a certain amount of work to be done by means of a steam-engine. Describe in detail the process, and state the conditions which determine the amount of work obtainable.

2. Is it true that glass can be employed as a fire-screen ? Is it true that solar rays are able to traverse empty space ? Is it possible for rays to traverse a body

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without warming it? What is the effect of radiation on bright metal? Give reasons in each case.

3. Make a diagram showing the course of rays through a microscope from object to retina of eye. [It is best to draw a compound microscope as well as a simple magnifying glass.]

4. An object placed in front of a mirror has its image formed on a screen 10 feet away from the mirror, magnified 5 times. Find the curvature of the mirror.

5. Sketch and describe a thermo-electric pile, its principle, and its uses.

6. How would you construct and wind an electro-magnet adapted to support heavy weights?

7. Draw a complete apparatus for the rapid electrical decomposition of water, indicating the place of appearance of each gas, and all the other chemical actions which go on in the circuit.

MECHANICS

1. What do you understand by 'inertia'? Illustrate the differences between inertia and weight.

2. How does the time of flight of a projectile depend on the direction in which it is fired? Which direction will keep it the longest time in the air, which direction will give it the longest range, which direction will raise it to the greatest height? Give reasons.

3. Explain, with a diagram, the use of adjustable rifle 'sights' for different ranges.

4. A stone dropped over a cliff reaches the ground in 5 seconds. What is the height of the cliff, and with what speed must the stone be thrown back in order to reach the top?

5. What do you know about the recoil of a gun? Is the energy of the recoil equal to the energy of the projectile? If the gun weighs a ton and the shot 28 lbs.,

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and if the unchecked maximum recoil velocity is 3 yards a second, what is the muzzle velocity of the shot?

6. How is the tension in the cord supporting a picture in the ordinary way over a nail dependent on the angle made by the two halves of the cord with each other? What is the tension when the picture weighs 20 lbs. and the angle is a right angle?

7. How will you estimate the mechanical advantage of an ordinary screw-press as used, say, for copying letters? Explain the object of 'machines' in general. Draw a system of pulleys which gives the mechanical advantage 4.

8. Explain the conditions of equilibrium of bodies (1) rolling on a smooth surface, (2) floating in still water.

9. Sketch and describe the internal mechanism either (1) of some form of air-pump, or (2) of some form of water-pump. Show how to calculate the residual pressure in the receiver of the air-pump after a given number of strokes.

APPLIED MECHANICS

1. Assuming the safe tensile strength of wrought iron to be 5 tons per square inch, find the proper diameter of a short piston rod, the maximum pressure of steam being 200 lbs. per square inch, and the diameter of piston 10 inches. Would this diameter be considered under any practical conditions otherwise than in tensile or compressive strength?

2. State briefly what you know about cement, and describe its essential qualifications for engineering purposes.

3. It is found that a piece of pine 2 feet long, 1 inch square, when supported at the ends, breaks with a load at the centre of 300 lbs. Find the depth of a wooden beam 20 feet long, 8 inches in width, which would just support a weight of 2 tons at the centre.

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4. State the various means by which power can be transmitted from a steam-engine to a machine, and sketch any means by which the speed ratio in transmission can be varied.

5. Sketch an indicator diagram for a steam-engine cutting off at one-third the stroke; and point out how its shape would be altered by (1) insufficient steam port area, (2) insufficient exhaust port area, and (3) excessive compression. Explain how you would find the horse-power by means of such a diagram, and state what other data you would require.

6. Sketch and explain the action of any form of hydraulic crane, or other hydraulic appliance in connection with dock work, and state briefly the advantages of the high pressure water-power system.

7. What is the difference between the action of a governor and a fly-wheel?

8. State any important improvements within the last ten years in the development of (1) marine engines, (2) the locomotive.

MACHINE DRAWING

(Drawings are not to be inked in or coloured.)

Draw half full-size two completed views of the locomotive piston shown, putting in a suitable nut and cotter.

CHEMISTRY

1. Describe experiments which would demonstrate the composition of air both qualitatively and quantitatively.

2. Nitrogen has been characterised as a very inert element; give facts and experiments which would support or contradict this view. How can nitrogen be directly combined with (*a*) hydrogen, (*b*) oxygen, (*c*) any other element?

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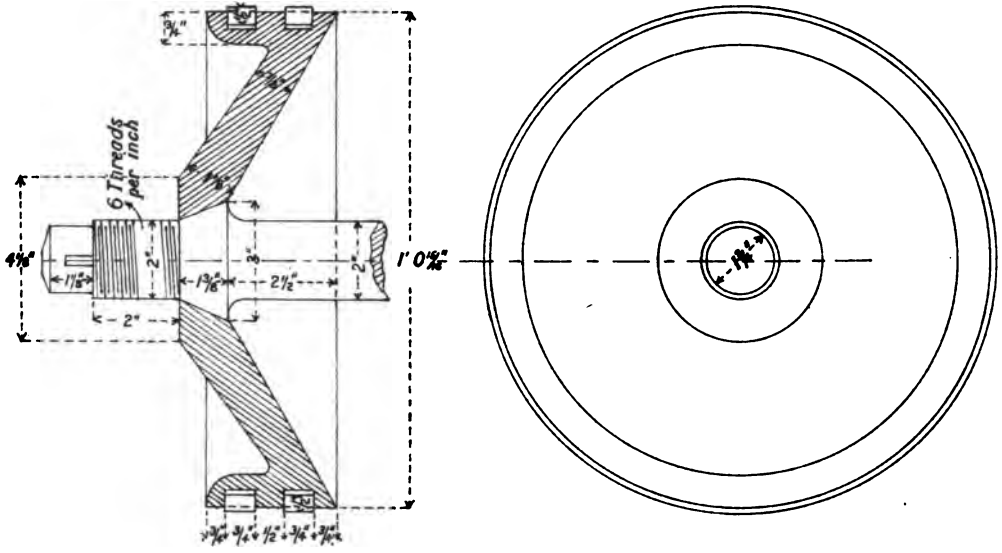
Locomotive Piston



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3. Describe, with a sketch of apparatus, an experiment which would demonstrate the volume occupied by two volumes of hydrogen and one volume of oxygen after combination. Deduce from this the specific gravity of water vapour compared with air at the same temperature and pressure.

4. Give an account of carbon dioxide, and calculate the volume of gas which would be produced by passing one litre of carbon dioxide slowly over red-hot charcoal and cooling to the original temperature.

5. What is the action of chlorine upon (*a*) water after long exposure, (*b*) a cold dilute solution of sodium hydrate, (*c*) ammonium hydrate, (*d*) ferrous sulphate, and (*e*) iodine? Give equations.

6. Calculate what weight of oxygen is required for the complete combustion of 11.2 litres of ethylene, and what is the weight of each of the products.

7. Explain the bearing of (*a*) the law of Dulong and Petit, and (*b*) isomorphism, on the determination of the atomic weights of the elements. Give examples.

ELEMENTARY BIOLOGY

(Only FIVE *Questions to be answered.)*

1. What is a larva? What are the larvæ of the following animals like, and where do you expect to find them?

The Frog,
The Dragon-fly,
Any common Butterfly.

2. Describe the mode of formation of a Coral Island.

3. What advantages do plants gain from a climbing habit? Mention three examples of British climbing plants, and state the means they adopt in each case.

4. How does a whale breathe and feed, and how does it differ from a fish?

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5. Describe in botanical terms an apple, a strawberry, a date, and an acorn.

6. Mention some of the distinctive higher animals (mammals) of Australia, South America, and South Africa.

7. Point out the chief differences between the following :—An insect, a fish, a bird, a bat, and a dog.

8. Why is it that a shoot cut off from a plant withers and droops ?

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VICTORIA UNIVERSITY

UNIVERSITY COLLEGE LIVERPOOL

MEDICAL FACULTY

PROSPECTUS OF CLASSES

SESSION 1900-1901

AT THE UNIVERSITY PRESS OF LIVERPOOL 1900

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THE MEDICAL FACULTY

Principal

PROFESSOR A. W. W. DALE, M.A.

Chairman

PROFESSOR HERDMAN, F.R.S.

Professors and Lecturers in the Faculty

Chemistry	Prof. J. CAMPBELL BROWN, D.Sc., F.C.S., F.I.C.
Physics	„ OLIVER LODGE, D.Sc., LL.D., F.R.S.
Natural History	„ W. A. HERDMAN, D.Sc., F.L.S., F.R.S.
Botany	„ R. J. HARVEY GIBSON, M.A., F.L.S.
Anatomy	„ A. M. PATERSON, M.D.
Physiology and Histology	„ C. S. SHERRINGTON, M.A., M.D., F.R.S.
Materia Medica and Therapeutics	„ W. CARTER, LL.B., M.D., B.Sc., F.R.C.P.
Pathology	„ RUBERT W. BOYCE, M.B.
Surgery	„ RUSHTON PARKER, M.B., B.S., F.R.C.S.
Medicine	„ T. R. GLYNN, M.D., F.R.C.P.
Midwifery and Gynæcology	„ H. BRIGGS, M.B., F.R.C.S.
Medical Jurisprudence	„ F. T. PAUL, F.R.C.S.
Hygiene	„ E. W. HOPE, M.D., D.Sc.
Ophthalmology	EDGAR A. BROWNE, F.R.C.S.
Mental Diseases	J. WIGLESWORTH, M.D., F.R.C.P.
Diseases of Children	PETER DAVIDSON, M.A., M.B.
Clinical Surgery	Sir W. M. BANKS, M.D., F.R.C.S. RUSHTON PARKER, M.B., B.S., F.R.C.S. F. T. PAUL, F.R.C.S.
Clinical Medicine.	T. R. GLYNN, M.D., F.R.C.P. R. CATON, M.D., F.R.C.P. W. CARTER, M.D., LL.B., B.Sc., F.R.C.P. JAMES BARR, M.D., M.R.C.P.
Clinical Gynæcology	T. B. GRIMSDALE, B.A., M.B.
Tropical Medicine.	MAJOR ROSS, I.M.S.
Infectious Diseases	N. E. ROBERTS, M.B., D.P.H.
Vaccination	N. E. ROBERTS, M.B., D.P.H.

SCHOOL OF DENTAL SURGERY

Dental Anatomy and Physiology	Prof. F. T. PAUL, F.R.C.S.
Dental Histology	Prof. C. S. SHERRINGTON, M.D., F.R.S.
Dental Surgery	E. J. M. PHILLIPS, M.R.C.S., L.D.S. Eng.
Dental Mechanics	E. A. COUNCELL, L.D.S., Eng.
Dental Metallurgy	T. L. BAILEY, Ph.D.
Dental Pathology	Prof. BOYCE, M.B.

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DEPARTMENTAL LECTURERS

Organic Chemistry	C. A. KOHN, B.Sc., Ph.D.
Metallurgy	T. L. BAILEY, Ph.D.

ASSISTANT LECTURERS

Chemistry	T. L. BAILEY, Ph.D. C. A. KOHN, B.Sc., Ph.D. A. W. TITHERLEY, M.Sc., Ph.D.
Physics	WALTER H. DERRIMAN.
Zoology	F. J. COLE.
Botany	CHARLES E. JONES, B.Sc., F.L.S.
Anatomy	T. R. W. ARMOUR, M.B.
Chemical Physiology	A. S. GRÜNBAUM, M.A., M.D., M.R.C.P.
Physiology and Histology	J. S. MACDONALD, M.A., M.R.C.S.
Pathology and Bacteriology	J. H. ABRAM, M.D., M.R.C.P.
Surgery and Surgical Pathology	W. THELWALL THOMAS, F.R.C.S.
Midwifery and Gynæcology	A. J. WALLACE, M.D.
Forensic Medicine and Toxicology	R. J. M. BUCHANAN, M.D., M.R.C.P.
Hygiene	(Vacant).

Dean of the Faculty

PROFESSOR PATERSON, M.D.

The Dean will be in his room, opposite the College Office, on Friday, September 28th, and following days, to register students and give general information about the curriculum.

DEMONSTRATORS

Anatomy	T. R. W. ARMOUR, M.B. D. DOUGLAS L. CRAWFORD, F.R.C.S. E. M. STOCKDALE, M.R.C.S., L.R.C.P.
Physiology and Histology	J. S. MACDONALD, M.A., M.R.C.S.
Materia Medica	P. H. MARSDEN.
Pathology ana Bacteriology	W. B. WARRINGTON, M.D., M.R.C.P. H. R. JONES, M.A., M.D., D.P.H.
Surgery and Surgical Pathology	W. THELWALL THOMAS, F.R.C.S.
Midwifery and Gynæcology	A. J. WALLACE, M.D.
Forensic Medicine and Toxicology	R. J. M. BUCHANAN, M.D., M.R.C.P.
Dental Anatomy and Physiology	J. A. WOODS, L.D.S., Eng.
Tropical Medicine	H. E. ANNETT, M.D.
Obstetric Assistant	(Vacant).
Research Assistant Bacteriology	C. BALFOUR STEWART, B.A., M.B.
Holt Fellow (Physiology)	R. J. EWART, B.Sc.
„ (Pathology)	E. E. GLYNN, B.A., M.B.
Gee Fellow (Anatomy)	G. C. WALKER, M.B., D.P.H.

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THE MEDICAL SCHOOL

The Liverpool Medical School was formally established in 1834, although before that date organised clinical instruction was given at the Royal Infirmary. On the foundation of University College, the Royal Infirmary School of Medicine was incorporated with it, and both became an integral part of the Victoria University in 1884.

LECTURERS IN THE MEDICAL FACULTY since its Foundation

R. Formby, M.D.	1834-1840	R. Harrison	1865-1877
W. Gill	1834-1836	A. B. Steele	1866-1878
E. Batty	1834-1864	F. T. Roberts, M.D.	1866-1869
S. Malins, M.D.	1834-1843	A. Davidson, M.D.	1866-1897
J. Dawson	1834-1835	E. H. Birkenhead, D.Sc.	1866-1867
W. Reynolds, M.D.	1834-1840	J. C. Brown, D.Sc.	1867
F. R. Philp, M.D.	1834-1837	R. E. Stewart	1868-1885
J. P. Brandreth, M.D.	1834-1836	W. Carter, M.D.	1869
J. Long	1834-1866	W. M. Banks	1870
J. P. Halton	1835-1837	R. Caton, M.D.	1870
W. H. Duncan, M.D.	1835-1848	T. S. Walker	1871-1885
C. Bryce, M.D.	1834-1837	E. H. Dickinson, M.D.	1872-1882
J. M. Banner	1837-1843	R. Parker, M.B., B.S.	1877
R. W. Scott, M.D.	1837-1844	G. Shearer, M.D.	1878-1887
J. Dickinson, M.D., F.R.S.	1837-1854	J. Wallace, M.D.	1879-1898
R. H. Brett, Ph.D.	1840-1856	E. J. M. Phillips	1880
G. Freckleton, M.D.	1845-1846	Oliver J. Lodge, D.Sc., LL.D., F.R.S.	1881
J. Cooper	1846-1853	W. A. Herdman, D.Sc., F.R.S.	1881
T. Inman, M.D.	1846-1861	T. R. Glynn, M.D.	1884
J. B. Nevins, M.D.	1848-1877	F. T. Paul	1885
R. H. Taylor, M.D.	1850-1871	Edgar A. Browne	1885
F. D. Fletcher	1853-1865	E. W. Hope, M.D.	1886
T. C. Archer	1854-1858	R.J.HarveyGibson,M.A.	1887
T. F. Grimsdale	1854-1865	A. Barron, M.B.	1888-1894
J. Cameron, M.D.	1855-1872	J. Wiglesworth, M.D.	1889
A. T. H. Waters, M.D.	1855-1884	P. Davidson, M.B.	1889
J. B. Edwards, Ph.D.	1855-1866	F. Gotch, M.A., F.R.S.	1891-1895
C. Collingwood, M.B.	1858-1866	A. M. Paterson, M.D.	1894
W. H. Broadbent, M.D.	1858-1860	R. Boyce, M.B.	1894
R. Gee, M.D.	1860-1889	C. S. Sherrington, M.A., M.D., F.R.S.	1895
F. Ayrton, M.D.	1861-1862	James Barr, M.D.	1897
J. Snape	1861-1881	H. Briggs, M.B.	1898
E. Whittle, M.D.	1862-1885	T. B. Grimsdale, M.B.	1899
E. R. Bickersteth	1863-1870		
H. G. Rawdon, M.D.	1864-1869		

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THE MEDICAL SCHOOL

forms part of the group of buildings composing University College. It is most conveniently situated in the centre of the city in a large square of ground bounded by Brownlow Hill, Brownlow Street, Pembroke Place, and Ashton Street. In this space the Medical School occupies a central position between the new Royal Infirmary and the recently erected College Buildings. The Lying-in Hospital occupies the south-west corner of the area; the Dental Hospital is within five minutes' walk; and within a quarter of a mile are the Eye and Ear Infirmary and the Children's Hospital, the practice of all of which is free to students.

A map of Medical Liverpool is appended, showing the relation of University College to the various hospitals.

The school buildings comprise the necessary Lecture Rooms and Laboratories and the Museums of Anatomy and Pathology. The Dissecting Room and Theatres are lit by the electric light.

NEW BUILDINGS

(Anatomy, Surgery, etc.)

The buildings comprising the Medical School, which, with various additions and alterations, have existed since its foundation, are at present being gradually replaced by new and modern Laboratories. At the present time new Botanical, Anatomical, and Surgical Departments are being erected, adjoining the old buildings and the Thompson Yates Laboratories.

THOMPSON YATES LABORATORIES

(Physiology and Pathology.)

Excellent Laboratories, recently provided by the generosity of the Rev. S. A. Thompson Yates, were formally, in 1898, opened by Lord Lister, President of the Royal Society.

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The Department of Physiology and Histology includes large and small Lecture Theatres and spacious Class Rooms for instruction in Chemical Physiology, and in Physical Physiology, including the use of the various graphic methods. The second floor of the building contains the class room for Histology and other microscopical work, with a preparation room adjoining and opening into it. The Laboratory is admirably lighted throughout. Each student's place is ample for advanced as well as elementary work, and is supplied with all requisites and reagents for his individual use. On the first floor are situated the Lecture Theatres, thoroughly equipped for optical projection, and for experiments and demonstrations, and large Laboratories for Chemical and Physical Physiology. The Chemical Room is provided with places for upwards of forty students, each with the necessary fittings for work in Chemical Physiology. A small number of places are more elaborately furnished for advanced work and research. Two rooms are also provided for Organic Analysis. In the Physical Laboratory, special arrangements have been made by which the best graphic methods have been supplied for the use of each of thirty students for whom accommodation is provided. In the basement of the building two rooms are specially set apart for work in Calorimetry and Gas Analysis.

The Department of Pathology includes three spacious Laboratories for the study of (1) Morbid Anatomy and Histology, (2) Bacteriology, and (3) Chemical Pathology. The Morbid Anatomy Class Room is on the ground floor, in direct communication with the Pathological Museum. It is fitted with fully equipped places for seventy students, and the most recent appliances for histological work. The Room is provided with a large projecting Lantern for demonstration purposes. The Bacteriology Class Room is furnished in a most complete way for the purpose of bacteriological study and investigation. The department further contains three large rooms for private investigations,

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fitted completely with apparatus, shafting and electric motors; along with special preparation room and workshop, a centrifuge chamber, incubator room, photographic rooms, etc.

The Laboratories are lighted throughout by electricity. Special care has been taken to provide constant pressure in the supply both of gas and water, and the heating arrangements have been carried out on the most modern methods. Independent motors are provided for the shafting in both Physiological and Pathological Departments.

Students' Room

A commodious Common Room is provided in the building for the use of students in the Medical Faculty.

School of Hygiene

The building known as Ashton Hall, which previously accommodated the Pathological Department, is now devoted entirely to the study of Hygiene. It includes a large Lecture Hall, Laboratories and Work Rooms, and a Museum of Hygiene. The classes held in the building are :—Lectures in Hygiene for Medical Students, classes for the Diploma in Public Health, and classes for the Sanitary Inspection certificates of the Victoria University, and the Sanitary Institute.

The school is under the immediate direction of Dr. Hope, the Professor of Hygiene. It is administered by a board composed of Members of the Senate and Council of University College, and Members of the City Council.

Dr. H. R. Jones has been appointed Tutor in Public Health, and, under the direction of the Professors of Hygiene, Pathology, and Chemistry, gives systematic instruction to D.P.H. candidates.

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Outdoor Midwifery

Brownlow House, 175 Brownlow Hill, close to the College, now serves as the residence of the Obstetric Assistant, who is responsible under the Professor of Midwifery for the course of Outdoor Midwifery.

The house is comfortably furnished, and is intended to provide accommodation for senior students during the period of attendance on puerperal cases. Arrangements have been made with the Ladies' Charity and Lying-in Hospital so that the necessary twenty cases can be attended in two or three weeks. Lodgings are provided for 10s. a week, by arrangement with the Obstetric Assistant.

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MUSEUMS

The Anatomical Museum adjoins the Dissecting Room, and is intended to assist students in the study of Human Anatomy.

It contains the following collections :—

(1) Specimens of human and comparative anatomy.
(2) A series of skulls, human and comparative, collected by Professor Paul and others, illustrative of human and comparative Dental Anatomy.
(3) Anatomical Models.
(4) Mounted dissections.
(5) Frozen sections through all parts of the body.
(6) Coloured sketches of dissections and frozen sections in which the various structures to be seen are named.

Numerous specimens, in the form of both wet and dry preparations, are annually added to the collection.

The Paget Reading Room, the gift of Dr. Paget-Tomlinson, adjoins the Anatomical Museum, and was constructed under the direction of Professor Sir W. M. Banks.

The Pathological Museum contains a valuable and representative collection of more than 2,500 specimens illustrative of Medical and Surgical Pathology, consisting of typical examples for teaching purposes, and of many rare forms for reference and research. In order to supplement the loss of colour which preserved specimens undergo, paintings, drawings and models are freely made use of. New specimens are being continually added to the Museum. The whole series was rearranged, and a newly revised Catalogue, published in 1895, in the form

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of a Handbook of Pathological Anatomy, of 500 pages, illustrative of the specimens in the Museum. A Supplement to the Catalogue has been recently published.

The Museum of Zoology and Comparative Anatomy is in the Zoological Department, and in addition to the collections of vertebrate and invertebrate animals used for illustration of the Lectures and displayed for the instruction of students, it contains a 'Fisheries Collection,' a 'Local Collection,' a Geological Collection, and a small Anthropological Collection.

The Museum of Botany is contained in the old Buildings, and comprises a complete teaching collection.

The Museum of Materia Medica is now placed in the Medical School, and comprises collections which are freely accessible to students during College hours. The collection has recently been rearranged and greatly extended.

The Museum of Hygiene is in connection with the School of Hygiene. It contains very many valuable Meteorological instruments, models, and specimens, illustrative of Sanitary work, good and bad. Among the exhibits are (1) a full-sized model of the drainage of a house according to the most modern principles of sanitation; (2) a section of a street showing construction, electric light cables, gas and water mains, etc., sewers and connexions of the drainage of house and street; (3) full-sized section of the Oswestry filter beds for the Vyrnwy water supply of Liverpool; (4) ventilators of all kinds; (5) pipes, gulleys, closets, and building materials; (6) filters, sterilizers, and water-testing apparatus; (7) exhibits of plumbing; (8) septic tank in working order; (9) old wooden and stone water-pipes, etc. Additions are being constantly made to the collection.

The Museum is open free to the public daily from 10 a.m. to 5 p.m., and on Monday and Wednesday evenings.

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The Museum of Midwifery and Gynæcology already contains a complete series of obstetrical and gynæcological instruments, freely accessible to students; specimens (anatomical and pathological), and numerous original water-colour drawings, prepared and presented by the Professor of Midwifery.

A Museum of Forensic Medicine is in process of formation.

COLLEGE LIBRARY

Librarian : J. SAMPSON

The College Library contains a selection of Standard Works on Medicine, Surgery, and Allied Sciences, which may be taken out under certain regulations. The collection has been recently rearranged and catalogued ; and the collection is kept up to date by the periodic addition of new works, under the supervision of the Honorary Librarian of the Medical Faculty, Professor Sherrington.

In addition to the general College Library, smaller departmental libraries, containing periodicals, works of reference, and plates, are contained in the Anatomical, Zoological, and Pathological Departments. Students are allowed the free use of these collections, but no book may be removed from the Department.

STUDENTS' SOCIETIES

Debating Society

This Society has now been in existence for many years. Past and present students, and members of the staff of the College and Hospitals of the city are eligible for membership. The objects of the Society are the reading and discussion of papers, the exhibition of specimens, and the narration of cases. Meetings are held on alternate Wednesdays, at 7.30 p.m., in the Anatomical Theatre. Valuable prizes of books or instruments are given annually : (1) for the best paper read before the Society, (2) for the

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best reports on Medical and Surgical cases, (3) for the best essay on a subject of Medical interest, (4) for the best Anatomical preparation, (5) for the best Miscroscopical specimens exhibited, and (6) for proficiency in debate. The Society is of great advantage in training students to speak in public and give clear expression to their ideas, and it meets with the warm support of the Medical Faculty. All information can be obtained from the Hon. Secs., Drs. Armour and Mr. O. T. Williams.

College Athletic Club

The Athletic Club has the great advantage of the permanent use of a field placed at its disposal by Chas. W. Jones, Esq., Field House, close to Sefton Park Station. It possesses tennis courts, cricket pitches, football grounds, and a small pavillion. A man is in constant attendance to keep the ground in order, and a pavillion and dressing rooms are provided near the ground. Matches are arranged with other clubs. A room for boxing and fencing has been set apart for the use of members at the College. The Athletic Sports are held annually in May. All information can be obtained from the President, Prof. Paterson, the Treasurer, Dr. Kohn, or the Hon. Sec. Mr. Hebblethwaite.

STUDENTS' COMMON ROOMS AND LUNCHEON ROOMS

The College contains Common Rooms, which are under the control of the students. One large Common Room in the Thompson Yates Laboratories is set apart for the use of students. The Luncheon Rooms are for the present situated in the College Quadrangle, and a movement is on foot for providing a Students' Union, including a Refectory.

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GENERAL INFORMATION

THE MEDICAL CURRICULUM

The Medical Curriculum is governed by the regulations of the General Medical Council, which requires each student to submit evidence of having been registered as a Medical Student for a period of five years before he is allowed to obtain his Diploma or Degree.

REGISTRATION AS A MEDICAL STUDENT

Registration as a Medical Student is therefore the first step to be taken by one who desires to proceed to a medical qualification. Before commencing the study of medicine, every student is required to possess a certificate of having passed one of the Preliminary Examinations in general education recognised by the General Medical Council. For purposes of registration, this certificate must be presented to the Dean of the Medical Faculty at the commencement of medical study.

PRELIMINARY EXAMINATION IN GENERAL EDUCATION

There is a wide choice in the examinations recognised as qualifying for registration as a Medical Student, after passing which a student may proceed to obtain a medical qualification.

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SUBJECTS OF EXAMINATION FOR REGISTRATION AS A MEDICAL STUDENT

The certificate required by the General Medical Council in order that registration may be effected must show that the student has passed in the following subjects, at one and the same examination :—

(*a*) English Language, including Grammar and Composition.

(*b*) Latin, including Grammar, Translation from specified authors, and Translation of easy unseen passages.

(*c*) Mathematics, comprising :- - (i) Arithmetic; (ii) Algebra, as far as Simple Equations, inclusive; (iii) Geometry, the matter of Euclid, Books I, II, III, with easy deductions.

(*d*) One of the following optional subjects:—(i) Greek, (ii) French, (iii) German, (iv) Italian, (v) any other Modern language, (vi) Logic.

MEDICAL DEGREES AND DIPLOMAS

Among the numerous qualifications to practice, a broad distinction exists between Medical Degrees and Diplomas. It is generally recognised that a student should aim at obtaining a Degree if possible, such as the M.D. Degree of the Victoria University. The advantages of such a course are obvious. The course of study for a Degree is the same in length as that for the Diploma, and almost the same in character; the expense is no greater, but, on the other hand, is rather less, as to obtain a Diploma several journeys have to be taken for the purpose of examination, whereas all the examinations for a University Degree (M.D. Victoria) can be passed in Liverpool. The standard of General and Medical Education required for the Degree is higher than for the Diploma. The various

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Diplomas (M.R.C.S. England, L.R.C.P. London, &c.), while requiring the same five years' study, and a slightly modified curriculum, can be obtained after passing any of the preliminary examinations recognised by the General Medical Council (Appendix, page 91). A more restricted choice of entrance examinations is placed before the student who desires to obtain the Degree of a University. The Victoria University requires that one of the following examinations shall have been passed :—

1. The Victoria University Preliminary Examination.
2. The Final Examination for Graduation in Arts of any University in Great Britain and Ireland.
3. The Matriculation Examination of the University of London.
4. The Sénior Leaving Certificate Examination of the Oxford and Cambridge Boards.
5. The Senior Local Examination of Oxford or Cambridge, with Honours.

In all the above, the necessary subjects must have been taken up, but if Mechanics has not been included, it may be passed in a separate approved examination before the 1st M.B. The University Preliminary Examination (1) must be passed if a Degree in Science is desired, as well as a Medical Degree. The University Authorities have discretionary power to accept other examinations of at least equal standard (provided the necessary subjects are taken).

The University Preliminary Examination is held in Liverpool in June and September of each year (see Appendix, page 98).

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PROFESSIONAL STUDY

Having passed a recognised Entrance Examination, and having been registered as a Medical Student, the course of Medical Study is begun, extending over a period of five years.

(I) The Degree Course

First Year.—This is occupied in Science Classes, which commence in October of each year, and are continued until the time of holding the *First Examination* for the M.B., in the June of the following year. They consist of classes in Physics, Biology, Botany, and Chemistry. The Composition fee for all that is requisite is £24 15s., and must be paid to the Registrar in the College Office.

Second Year.—The following October, if the First Examination has been passed, the student enrols with the Dean, at University College, and pays the first half of the Composition fee, namely, £30. During the year, he studies Anatomy, Physiology, Histology, Materia Medica, and Practical Pharmacy. He is advised to present himself for examination in Materia Medica at the end of this year, namely, in July.

Third Year.—At the commencement of this year, in October, he completes the payment of the Composition fee by the second instalment of £30. At this time he may also begin Hospital work (Practical Medicine), and if he intends to take this out at the Royal Infirmary, he must pay the first half of the Infirmary fee, namely, £21, to the Hon. Secretary of the Medical Board, Dr. James Barr. His chief studies are, however, Anatomy, Physiology, and Histology. These, with Materia Medica (unless taken previously), form the subject of the *Second Examination*, for which he is expected to be prepared by March.

Fourth Year.—In October he pays the second half of the Infirmary fee (in the case of the Royal Infirmary, £21),

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and besides attending the Hospital he takes out classes in Medicine, Surgery, Midwifery, Pathology, Therapeutics, Forensic Medicine, and Hygiene. In July he may present himself for *the first half of the Final Examination*, in either two or three of the following groups of subjects :—(i) Pathology, (ii) Therapeutics, (iii) Forensic Medicine, Toxicology, and Hygiene.

Fifth Year.—This year he attends classes in Medicine, and holds the necessary medical posts at the Hospital. In addition he must attend the following courses—(*a*) Out-door Midwifery and Practical Obstetrics ; (*b*) Mental diseases ; (*c*) Infectious diseases ; (*d*) Vaccination. The *final qualifying M.B. Examination* is thus reached in July, five years after registration.

The further Degree of M.D. may be obtained one year after that of M.B., and for this the Graduate must prepare and present a printed dissertation. The Degree of M.B. is generally understood to carry with it, by courtesy, the title of Doctor.

(II) The Diploma Course

First Year.—If the student intends to take a Diploma, he enrols on registration with the Dean, at University College, paying either the first half of the Composition fee, namely, £35, or at a somewhat higher rate for each class separately. During the Winter he studies Biology, Chemistry, and Anatomy, and should present himself for his *First Professional Examination* in April, in Chemistry and Biology. During the Summer the subjects are Histology and Practical Pharmacy (including Materia Medica). The examination in Pharmacy may be taken now, or may be deferred till the Third examination.

Second Year.—In October he pays the second half of the Composition fee, £35, and devotes his second year entirely to Anatomy and Physiology, and Histology. These subjects will occupy all his time, if he desires to

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present himself for his *Second Examination* in March. In the Summer he may commence Hospital work, and if the Royal Infirmary is chosen he must pay the first half of the Infirmary Composition fee, £21, to the Hon. Secretary of the Medical Board, Dr. Barr.

Third Year.—He now enters on strictly professional work and pays the Hospital fees, in the case of the Royal Infirmary either a further instalment of £21, or the whole amount, £42. He attends classes in Medicine, Surgery, Midwifery, Pathology, Therapeutics, Forensic Medicine, and Hygiene, and obtains a surgical dressership at the Hospital.

Fourth and Fifth Years.—These years he devotes almost entirely to Hospital work, obtaining the necessary appointments in Medicine under the Physicians. He has, in addition, to take out practical classes in Medicine, Surgery, and Midwifery, and to attend on the necessary number of midwifery cases. He must also attend at an Asylum for studying mental diseases, at the Corporation Infectious Diseases Hospitals, and obtain instruction in Clinical Ophthalmology, and in Vaccination. He then presents himself, two years after passing the Second examination, for the *Final Examination* in Medicine, Surgery, Midwifery, Pathology, Materia Medica and Therapeutics, Forensic Medicine and Hygiene.

In addition to the above two courses, a third is occasionally taken, *viz.*, that for the Diploma of the Scottish Colleges of Physicians and Surgeons. The curriculum is very similar to that just described, with but slight alterations.

FEES

The cost of medical education in Liverpool may be less or greater according as the student decides or not to pay the various Composition fees, by which the expense is reduced by about twenty-five per cent. :—

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I. Composition Fees:—

1. Science Course (first year) ...	...	£24	15 0
2. Medical Course (four years)	...	60	0 0
3. Infirmary Course (perpetual)	...	42	0 0
II. Necessary extra Classes...	... about	20	0 0
III. Examination Fees (for Victoria M.B.)...		15	0 0
IV. Books and Instruments...	... about	50	0 0
Total cost	... about	£211	15 0

SEPARATE FEES

	First Course. £	s.	d.	Second Course. £	s.	d.
Chemistry (three terms)	4	0	0	2	2	0
„ (two terms)	3	0	0	2	2	0
Practical Chemistry	4	4	0	4	4	0
Organic Chemistry	1	0	0	3	0	0
Practical Organic Chemistry	4	0	0	3	0	0
Chemistry Revisal	3	3	0			
Physics	6	0	0			
Zoology, General	3	0	0			
Elementary Biology—Winter	4	0	0			
Practical Biology—Winter	4	4	0			
Practical Biology—Summer	2	0	0			
Biology Revisal	3	3	0			
Botany	3	0	0			
Practical Botany	3	0	0			
Anatomy	5	5	0	2	12	6
Practical Anatomy—6 months	3	3	0	3	3	0
Practical Anatomy—3 months	2	2	0	2	2	0
Anatomical Demonstrations	2	2	0			
Human and Mammalian Embryology	3	3	0			
Physiology and Histology Lectures	5	5	0	2	12	6
Physiology Demonstrations	2	2	0			
Practical Physiology	2	2	0	2	2	0
Experimental Physiology—Lent	4	4	0	4	4	0
Practical Physiology—Summer	3	3	0			
Histology Lectures (alone)	2	2	0			
„ Practical	5	5	0			
Pathology	4	4	0	2	2	0
Practical Pathology and Bacteriology	4	4	0	4	4	0
Museum Demonstrations	2	2	0	1	1	0
Materia Medica	2	2	0	1	1	0
Practical Materia Medica	2	2	0	2	2	0
Therapeutics	4	4	0	2	2	0
Midwifery and Gynæcology	5	5	0	2	12	6

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	First Course. £	s.	d.	Second Course. £	s.	d.
Medicine	5	5	0	3	3	0
Practical Medicine	2	2	0			
Surgery	5	5	0	1	1	0
Practical Surgery	4	4	0	2	2	0
Operative Surgery	4	4	0	4	4	0
Ophthalmology	1	1	0	1	1	0
Forensic Medicine	4	4	0	2	2	0
Practical Toxicology	3	3	0	2	2	0
Mental Diseases	1	11	6			
Hygiene	4	4	0	2	2	0
Diseases of Children	1	1	0			
Dental Surgery	3	3	0	2	2	0
Dental Mechanics	3	3	0	2	2	0
Dental Anatomy	3	3	0	2	2	0
Practical Dental Histology	2	2	0			
Dental Metallurgy, Lectures	3	3	0	2	2	0
" " Practical	3	3	0			
Dental Pathology	3	3	0			

COMPOSITION FEES

For the convenience and advantage of students reading for the Victoria M.B., Ch.B. degrees, it has been arranged that they may pay a single fee of £24 15s. to the Science and Arts Department of the College covering all the requisite classes for the first M.B. Examination and the registration fee; and later on a second fee, payable in two equal instalments with an interval of twelve months, of £60 to the Medical Faculty, covering all the classes required for the Intermediate and Final Examinations, except Experimental Physiology, Summer Anatomy, and Practical Materia Medica and Toxicology. Students preparing for the degrees of London or other Universities are allowed to avail themselves of these Composition fees. For students reading for Diplomas a composition fee of £70 has been fixed, which includes all the classes required by most of the Examining Boards, inclusive of Chemistry and Biology, but excluding Practical Medicine, the fee for which is £2 2s.

The following classes are included in both composition fees—Anatomy, Physiology (one course), Practical Physio-

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logy, Histology, Practical Histology, Dissection (two winters), Surgery, Practical Surgery, Ophthalmology, Therapeutics, Midwifery, Pathology, Practical Pathology, Forensic Medicine, Hygiene, Mental Diseases.

The Victoria Composition also includes—Materia Medica, two courses of Medicine, and Practical Medicine; the Diploma Composition also includes—Biology, Practical Biology, Chemistry, Practical Chemistry, and one course of Medicine.

The following classes are not included in either composition:—Experimental Physiology, Anatomical Demonstrations, Summer Anatomy, Diseases of Children, Practical Materia Medica, Museum Demonstrations, Practical Toxicology, and Physiological Demonstrations. The composition for the Diploma does not include Practical Medicine.

Extra Classes.—The following Courses are also required by students preparing for Degree and Diploma alike:—Out-door Midwifery (£4 4s.), Infectious Diseases (£3 3s.), and Vaccination (£1 1s.).

Library Fees.—All Medical students who do not take out the composition ticket are required, on registering, to pay an Annual fee of 10s. 6d. to the Library and Reading-room, or a Perpetual fee of £1 1s., which entitles them to the use of the Library so long as they remain students of the Medical Department of the College.

Hospital Fee.—This differs in different Hospitals. The Royal Infirmary fee is £42, payable in two instalments.

SCHOLARSHIPS AND PRIZES

The following Scholarships, details of which are subjoined, may be held during his curriculum by an individual student:—

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1. (On entrance) A Robert Gee Entrance Scholarship of £25 for one year ...	£25	0	0
2. (End of 1st year) A Lyon Jones Scholarship (Junior) of £21 for two years...	42	0	0
3. (End of 3rd year) A Lyon Jones Scholarship (Senior) of £21 for two years...	42	0	0
4. (End of 3rd year) University Scholarship in Medicine (second M.B.)... ...	25	0	0
5. (4th or 5th year) A Derby Exhibition	15	0	0
(After graduation) A Holt Fellowship in Physiology or Pathology, £100 for one year ; *or*, a Robert Gee Fellowship in Anatomy, £100 for one year	100	0	0
6. Alexander Fellowship in Pathology ...	100	0	0
7. Medical Faculty Medals, Prizes, and Certificates			
	£349	0	0

Regulations

I. Robert Gee Entrance Scholarships

1. Four Scholarships of the value of £25 each for one year are offered for competition annually, on the results of the College Entrance Scholarships Examination.

2. The subjects of examination shall be selected by the candidate from Greek, Latin, French, German, English Essay, Mathematics, Mechanics, Physics, Chemistry, Biology (one paper, including Zoology and Botany).

3. The Scholarship is only open to male students, and to those who have not attended Day Classes in University College.

4. The successful candidate is required to register as a Medical student at the beginning of the next Session, and to attend the classes required for the first year's study for a Medical Degree of the Victoria University, and to pay the necessary composition fee.

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II. Junior Lyon Jones Scholarship

1. The Scholarship is open to students at the end of their First M.B. Course, provided that they have taken out the full course for the First M.B., and are of not more than one year's standing from the date of registration as Medical students.

2. The holder of the Scholarship will be required to proceed to a Victoria University Degree in Medicine.

3. The Scholarship will be awarded upon the results of the College terminal Examinations in the subjects of the First M.B. course, viz. :—Chemistry, Physics, Zoology, and Botany.

4. The Scholarship will be paid in two annual instalments of £21 at the commencement of the second and third years of study respectively, and the holder will be required to pay the composition fee for the Victoria Degree.

III. Senior Lyon Jones Scholarship

1. This Scholarship is open to all Medical students who submit evidence of satisfactory attendance at University College on courses in Anatomy and Physiology extending over two Winter Sessions, and on one Summer course in Therapeutics.

2. The Scholarship is awarded at the end of the second or third year of Medical study : the Science courses in the case of University students being reckoned as the first year.

3. The successful candidate must remain a student of University College during his fourth and fifth years, and attend the classes in a satisfactory way.

4. The Scholarship is awarded on the results of the senior class examinations in Anatomy and Physiology (Winter Session), and in Therapeutics (following Summer Session).

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5. The Scholarship will be paid in two annual instalments of £21.

IV. University Scholarship in Medicine

A Scholarship of £25 is awarded to the Candidate who stands first in the Second M.B. Examination in March. For details, see Appendix, page 116.

V. Derby Exhibition

The Derby Exhibition, founded by the Right Hon. the Earl of Derby, of the value of £15 for one year, is awarded by Competitive Examination annually. The examination is entirely clinical in its character, and is conducted partly at the bed-side, and partly by written commentaries on medical or surgical cases. Students of the Medical Faculty, having no legal qualification, are eligible for this Scholarship up to the end of two years after passing their Professional Examination in Anatomy and Physiology.* The examination will be held during the first fortnight of March, and in 1901 will be in Clinical Medicine. Candidates must give notice to the Dean on or before the last day of February.

VI. Holt Fellowship in Physiology and Pathology

Established by the late George Holt, Esq., in 1886, and renewed for a further period by Mrs. and Miss Holt.

Robert Gee Fellowship in Anatomy

Established by endowment from the estate of Mrs. Gee, widow of Dr. Gee, a former Lecturer in the Medical Faculty.

1. The value of each Fellowship shall be £100, tenable for a single year, and payable in three instalments, in the Autumn, Lent, and Summer terms respectively.

* Courses of study for higher qualifications interpolated in the curriculum are not counted in determining the eligibility of Candidates.

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2. The Fellow shall be required to devote his time to (*a*) teaching, (*b*) private study or research in the department of the Medical School to which he is attached, under direction of the Professor. The hours occupied in teaching shall be at that time of the day when the Fellow shall be of most use to the department.

3. If the attendance or work of the Fellow has not been satisfactory in the opinion of the Faculty during the first term, he shall forfeit the second and third instalments; if unsatisfactory during the second term, he shall forfeit the third instalment.

4. The Fellowship shall be open to all Senior students who have studied in the Medical Department of the College not less than two years, and possess a Medical Degree or Qualification.

5. Candidates shall send in application, not later than May 31st, to the Dean of the Medical Faculty, stating their qualifications and claims, and the Fellowship shall be awarded before the end of the Summer Session.

6. The election shall, as a rule, be decided by vote of the Faculty upon the merits of the candidates on report from the Professor of Physiology, Pathology, and Anatomy; but, in the event of claims appearing to be very evenly balanced, the Faculty shall be at liberty to require selected candidates to undergo an examination written or *vivâ voce*.

7. In making their selection, the Faculty will consider previous successes, aptitude for research, capacity for teaching, and all other circumstances by which the objects aimed at in the foundation of the Fellowship may best be fulfilled.

8. No candidate shall hold a Fellowship in the same subject for two years consecutively, unless under special circumstances, and under no circumstances shall the Fellowship be held for more than two years.

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VII. Alexander Fellowship in Pathology

Established by Dr. W. Alexander for five years.

This Fellowship is intended mainly for the purpose of original investigation in Pathology. It is of the annual value of £100, and the holder is eligible for re-election. The holder must be qualified, and is required to devote his whole time to the duties in the Thompson Yates Laboratories, under the direction of Dr. Alexander, and the Professor of Pathology.

The duties attached to the Fellowship are (1) to investigate for himself some selected subject in Pathology; (2) to assist Dr. Alexander in Pathological Research; (3) to examine Pathological material from the Workhouse Infirmary and the Home for Epilepsy.

The election is made by the Medical Faculty on the nomination of Dr. Alexander and the Professor of Pathology. Names of candidates, along with a statement of their qualifications, must be sent in writing to the Dean by May 31st, 1900.

VIII. Fletcher Prize in Physiology

A Book Prize (value £3 3s. 0d.) has been established by Dr. Gornall, of Warrington, in memory of the late Mr. Fletcher, a former Lecturer in Physiology in the Royal Infirmary School of Medicine. It is awarded to the student who takes the first place in the Junior Class of Physiology.

IX. Medical Faculty Medals, Prizes, and Certificates of Honour

First Year.—Bronze Medals and Certificates are offered for Elementary Anatomy and Histology. Silver Medals and Certificates for Chemistry and Elementary Biology.

Second and Third Years.—The Torr Gold Medal and Certificates for Advanced Anatomy. The George Holt

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Medal and Certificates for Physiology. Silver Medals and Certificates for Materia Medica, Public Health, and Medical Jurisprudence. Book Prizes of the value of £2 2s. 0d. for Practical Anatomy, Junior and Senior.

Fourth and Fifth Years.—For Medicine, Surgery, Midwifery, Pathology, Pharmacology, and Therapeutics, Silver Medals and Certificates. A Robert Gee Book Prize, value £5 5s. 0d., is offered in the class of Diseases of Children.

Class Examinations are conducted periodically during the Session in which the various classes are held, and Medical students may enter for them *at any period during their strictly Medical Curriculum* while attending the respective classes; no Medallist of a previous year in the same competition being allowed to compete a second time.

OLD STUDENTS' ASSOCIATION

The objects of the Association are—(1) To promote good fellowship. (2) To draw up and maintain a register of old students. (3) The preparation of a biographical register. (4) To assist old students of the College in their search for appointments. (5) To further the interests of the College in every possible way.

These objects can be best attained by the cordial co-operation of all past students.

Further information and membership forms can be obtained from the Secretary of the Association, University College.

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GENERAL REGULATIONS

Students are enrolled by Professor PATERSON, the Dean of the Medical Faculty, at the Dean's Office, University College, between the hours of 10 a.m. and 1 p.m. during the first week of each Session. No student can become a member of any class until his fees are paid.

All students, whether holders of Composition Tickets or not, must enrol themselves on the Register within fourteen days after the commencement of each Winter Session, and within ten days after the commencement of each Summer Session. Students desirous of joining later than these dates must make special application to the Managing Committee, stating why they failed to enter themselves during the allowed period.

Every student on entering is required to sign an obligation of conformity to the rules and regulations of the College. The Medical Faculty will not be responsible for the return of fees forfeited by the irregularity or misconduct of a student.

The Winter Session comprises the Autumn Term, which commences on the 1st of October and ends before Christmas, and the Lent Term, which commences on the 7th of January and terminates at the end of March. The Summer Session commences on the 1st of May and terminates at the end of July. In the departments of Chemistry, Physics, Botany, and Zoology, the Summer Term begins on April 20th, and ends at the end of June.

RULES TO BE OBSERVED BY STUDENTS

1. Students are required to be punctual and orderly in their attendance upon Lectures and Demonstrations, to observe decorum in the Dissecting Room and elsewhere, and to adhere rigidly to the regulations relating to the study of the Practical Classes.

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2. The Reading Room and Museums are intended for the use of the students, subject to such regulations as may from time to time be issued by the Medical Faculty. No Specimens, Preparations, Medical Journals, or Books of Reference, are to be removed from the School.

3. Students will be required to make good, to the satisfaction of the Medical Faculty, any loss, wilful damage, or injury they may occasion to the property of the School.

4. All students must enrol themselves on the School Register within fourteen days after the commencement of the Winter Session, and within ten days after the commencement of the Summer Session. Students desirous of joining after these dates must make special application to the Managing Committee, stating why they failed to enter themselves during the allowed period.

5. In order to obtain a certificate of attendance upon Lectures or Practical Classes, the Student must have been present at 75 per cent. of the meetings of the class, including the class examinations. In the event of the attendance being less than this, the certificate will be brought before the Managing Committee and withheld or granted at their discretion.

6. In all cases a certificate may be refused on the ground of the student not having conducted himself properly.

7. The certificates of each class will be ready on the last day of Lecture, and any student not receiving his certificate must make immediate application to the Lecturer, as *no schedules can be signed by the Dean without the production of the necessary certificates.*

8. Every student, before going up for examination by any licensing body, may be required to attend a Test Examination by the School Authorities to decide upon his

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fitness; and all students referred for three months' study in Chemistry, Biology, Anatomy or Physiology by such Examining Boards, are required to take out the Revisal Classes in these subjects.

9. Each student at the time of registration signs the following form of obligation :—

"I, the undersigned, being a Student of University College, hereby undertake to comply with all rules and regulations of the College, and to conduct myself on all occasions in a manner befitting the character of a gentleman and a student of the honourable profession of which I propose to become a member."

10. No allowance will be made, nor will the fee paid be returned, for any portion of the curriculum that a student may forfeit by irregularity of attendance or misconduct; and any wilful violation of the above or other rules which may from time to time be issued by the Medical Faculty, may subject the offender to removal from the school, and to the forfeiture of all fees and privileges as a student of the school.

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SUGGESTED COURSE OF STUDY

(I) Victoria University Medical Degrees

First Year

Winter and Summer.—Chemistry, Physics, Zoology, Botany.

Second Year

Winter.—Anatomy, Practical Anatomy, Physiology.

Summer.—Practical Anatomy, Histology, Materia Medica, Practical Materia Medica.

Third Year

Winter.—Anatomy, Practical Anatomy, Physiology and Histology, Practical Physiology, Hospital Practice, Practical Medicine.

Summer.—Therapeutics, Forensic Medicine, Hospital Practice.

Fourth Year

Winter.—Medicine, Surgery, Practical Surgery, Midwifery and Gynæcology, Practical Pathology, Hospital Practice.

Summer.—Pathology, Hygiene, Practical Toxicology, Hospital Practice, Ophthalmology.

Fifth Year

Winter.—Medicine, Out-door Midwifery, Hospital Practice.

Summer.—Operative Surgery, Advanced Practical Obstetrics, Vaccination, Infectious Diseases, Mental Diseases, Diseases of Children, Hospital Practice.

(II) Qualifications of London Conjoint Board

First Year

Winter.—Chemistry, Biology, Anatomy, Practical Anatomy.

Summer.—Histology, Anatomy, Practical Pharmacy.

Second Year

Winter.—Anatomy, Practical Anatomy, Physiology, Practical Physiology.

Summer.—Therapeutics, Forensic Medicine, Practical Medicine, Hospital Practice.

Third Year

Winter.—Medicine, Surgery, Midwifery and Gynæcology, Practical Surgery, Ophthalmology, Practical Pathology, Hospital Practice.

Summer.—Pathology, Hygiene, Hospital Practice.

Fourth Year

Winter.—Medicine, Clinical Midwifery, Hospital Practice.

Summer.—Vaccination, Hospital Practice, Advanced Practical Obstetrics.

Fifth Year

Hospital Practice, Ophthalmic Hospital, Mental Diseases, Infectious Diseases.

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TIME TABLE OF CLASSES

WINTER SESSION

	MON.	TUES.	WED.	THUR.	FRI.	SAT.
Chemistry, Lectures	3	3	..	..	3	..
„ Practical	..	..	..	2–5*	..	9.30
„ Organic (Advanced)	9.30	..	..	..	9.30	..
Physics, Lectures	4	12.30	..	12.30	..	..
„ Practical	9.30	..	..	..	..	..
Elementary Biology	11.30	..	11.30	..	11.30	..
Zoology, Practical (*Autumn term*)	..	9.30	..	9.30	..	..
„ „ (*Lent term*)	..	10.30	..	10.30	..	..
„ Demonstrations (*Lent term*)	..	..	2	..	..	..
General Zoology	9.30	..	9.30	..	9.30	..
Zoology, Lab.	9–5	9–5	9–5	9 5	9–5	..
Comparative Osteology	..	..	10.30	..	..	..
Botany, Lectures (*Lent term*)	10.30	..	10.30	..	..	..
„ Practical („)	..	..	.	2–4	..	..
Anatomy, Lectures	10.30	10.30	11	10.30	10.30	..
„ Practical	9–5	9 5	9–5	9–5	9–5	9–1
„ Demonstrations	4	..	4	..	4	..
„ Tutorial Class (Junior)	9.30	..	9.30	..	9.30	..
„ „ „ (Senior)	..	9.30	..	9.30	..	9.30
„ „ „ (Dentals)	..	4	..	4	..	..
Physiology, Lectures	11.30	11.30	..	11.30	11.30	..
„ Practical (Part i) (*Autumn term*)	..	2	..	..	1.30	..
„ „ (Part ii) (*Lent term*)	2 4	..	9.30	..	1.30	..
„ Tutorial Class	9.30	..	..	..	9.30	..
„ Demonstrations	..	4	..	..	3.30	..
Pathology, Practical (Morbid Anatomy) (*Autumn term*)	4	..	4	..	4	..
„ „ (Bacteriology) (*Lent term*)	4	..	4	..	4	..
„ „ (Dental)	..	..	daily	..	..	..
Museum Demonstrations	9	..	3	..	..	9
Medicine, Lectures	..	9.15	..	9.15	..	9.15
Practical Medicine (Royal Infirmary)	..	11.15	..	..	..	..
Surgery	9.15	..	9.15	..	9.15	..
Practical Surgery	..	3	..	3	..	..
Midwifery and Gynæcology Lectures	3	..	3	..	3	..
Practical Toxicology (*Lent term*)	..	..	..	..	..	10
Clinical Surgery (lecture)	..	..	12.15	..	..	..
Clinical Medicine (lecture)	..	12.30	..	..	..	..

* *Autumn Term.*

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SUMMER SESSION

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Organic Chemistry	3	3	..	..	3	..
Advanced Organic Chemistry	9.30	..	..	..	9.30	..
Practical „ „	10	..	10	..	..	..
Zoology	9.30	9.30	9.30	9.30	9.30	..
„ Revisal Class	11½—1½	..	11½— 1½	..	11½—1½	..
Embryology	..	11.30	..	11.30	..	..
Comparative Osteology	..	..	10.30	..	..	..
Botany, Lectures	10.30	..	10.30	..	10.30	..
„ Practical	..	10½— 12½	..	10½ 12½	..	..
Anatomy, Practical	9—5	9—5	9—5	9—5	9—5	9—1
„ Demonstrations	10	..	10	..	10	..
„ Tutorial Classes	9.30	9.30	9.30	9.30	9.30	9.30
„ Surgical and Applied	4	..	4	..	4	..
Human and Mammalian Embryology	..	10	..	10	..	..
Histology Lectures	..	2	..	2	..	..
„ Practical	11—1.30	..	11—1.30	..	11—1.30	..
Physiology, Practical	2	..	2	..	2	..
„ Tutorial Class	..	..	4	..	4	..
Chemical Physiology, Lectures	..	..	2	..	..	..
Materia Medica	..	9	..	9	..	9
„ Tutorial	..	..	..	..	9	..
Therapeutics	9	..	9	..	9	..
Practical Pharmacy (Royal Infirmary)	3	3	(2 days)	3	3	..
General Pathology	4	..	4	..	4	..
Pathological Chemistry	..	..	daily	..	..	..
Morbid Histology	..	..	„	..	..	..
Bacteriology	..	..	„	..	..	..
Museum Demonstrations	9	..	3	..	..	..
Forensic Medicine	..	9	..	9	..	9
Practical Toxicology	..	..	..	..	..	1
Public Health	3	..	3	..	3	..
Diseases of Children	..	..	..	2—4	..	..
Operative Surgery	..	3 p.m.	daily	..	..	..
Practical Obstetrics and Gynæcology	..	9	..	9	9	..
Ophthalmology	..	3	..	3	..	..
Mental Diseases	..	5	..	5	..	..
Clinical Surgery (lecture)	..	..	12.15	..	..	..
Clinical Medicine (lecture)	..	12.30	..	..	..	..

SCHOOL OF DENTAL SURGERY

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Dental Anatomy and Physiology	..	..	..	..	4	..
Dental Surgery	4	..	..	..	..	..
Dental Mechanics	..	4	..	..	..	..
Dental Metallurgy, Lectures	..	..	..	3	..	..
„ „ Practical	..	..	..	4	..	..
Dental Histology, Practical	..	..	..	4	..	..

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SYNOPSIS OF COURSES

*** *Students preparing for degrees of Scottish Universities, or the diplomas of the College of Surgeons of England and Society of Apothecaries, are reminded that no Certificates can be accepted unless they testify that the Student has attended 75 per cent. of the Meetings of the Class, and has been present at the Class Examinations.*

I.—PRELIMINARY SCIENTIFIC COURSES

N.B.—The Classes for the Summer Term in Chemistry, Botany, and Physics commence on 22nd April.

CHEMISTRY

Professor: J. CAMPBELL BROWN, D.Sc.

Assistant Lecturers and Demonstrators: T. L. BAILEY, Ph.D.; C. A. KOHN, B.Sc., Ph.D.; A. W. TITHERLEY, M.Sc., Ph.D.

Instruction in Chemistry is given in the commodious Chemical Department of the College, which includes a lecture theatre, two small class-rooms, a practical theatre for elementary work and qualitative analysis; the William Gossage Laboratory for advanced work; separate rooms for organic operations and for advanced work of a special character, such as gas analysis, water analysis, electro-chemistry, metallurgy, photometry and photography, chemistry applied to sanitary science, spectroscopic and microscopic research; a balance room and a handsome chemical museum; besides rooms for apparatus, service rooms, lavatories, and stores. They are fitted up with every convenience and appliance for the practical study of Chemistry in all its recent developments, and are provided with a dynamo and storage cells for electro-chemical work.

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The Professor will be in the Laboratory on October 1st, to see students desiring to consult him.

Elementary Course

Monday, Tuesday, and Friday at 3 p.m.

A Tutorial Class will meet on Thursday, at 3 p.m., or at some other convenient time, throughout the Session.

From 5th October to 20th February the lectures will treat of the Chemistry of the principal non-metallic and metallic elements, their compounds with each other, the principal acids and salts, and the elementary laws of the science of Chemistry.

Cyanogen, and its compounds, and urea, will next be treated of. In March, the Chemistry of organic compounds will be commenced. In the Summer Term, commencing on 20th April, the elementary course on organic compounds will be continued.

TEXT-BOOKS.—Bailey, *Tutorial Chemistry*, *Vols. I* and *II*; Thorpe, *Inorganic Chemistry*, *Vols. I* and *II*; or Richter, *Inorganic Chemistry*; Perkin and Kipping, *Organic Chemistry*; Remsen, *Organic Chemistry*.

Fee.—One Term, £2; Two Terms, £3; Three Terms, £4.

Conjoint Board and Dental Students' Course

In order to provide for those Conjoint Board and Dental students who desire to finish their course in March, ten special supplemental lectures on Organic Chemistry will be provided during Lent Term, at an hour to be arranged.

Advanced Courses

Course A. Non-Metals, Tuesday and Thursday, 11.30-12.30 p.m.

Fee.—For One Term, £1 10s.; for Two Terms, £2 10s.

Course B. Metals, Tuesday and Thursday, 9.30 a.m.

Fee.—For One Term, £1 10s.; for Two Terms, £2 10s.

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Course C. Organic, Monday and Friday, 9.30 p.m.
Fee.—For Three Terms, £3.

Course D. Chemical History and Philosophy, Wednesday, 9.30 a.m., winter session.
Fee.—£1 10s.

For details of these and other courses, see University College Calendar.

Practical Chemistry

Class 1. An optional elementary class to supplement the elementary lectures will meet on Tuesday at 4 p.m. during Autumn and Lent Terms.
Fee.—£1 10s.

2. Medical Class—Qualitative Analysis and Preparations.

A. Saturday, 9.30, *and during Autumn Term, Thursday, 2 to 5 p.m.

Students should apply at the Laboratory for a bench and apparatus immediately on registration.

TEXT-BOOKS.—Campbell-Brown, *Analytical Tables*; Menschutkin, *Analytical Chemistry*.

Fee for the course, £4 4s.

3. Revision Course.—At times to be arranged.
Fee.—One Term, £2 2s.

4. Practical Organic Class. Two half-days per week, at times to be arranged. For the Intermediate M.B. of London University, it is necessary to extend the work over two or three terms in order to work through the prescribed syllabus.
Fee.—£4 one Term, £7 one year.

† 5. Practical Exercises in Pharmaceutical Chemistry, Sanitary Subjects and Toxicology, and Subjects for

* Conjoint Board Students attending the class No. 2 may go through the required organic substances at an optional extra hour in March, and omit the Summer Term.
† For other classes and for Laboratory work, see the Arts and Sciences Section of the Calendar of University College Liverpool.

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Examinations in Public Health. The latter course may be taken in conjunction with that in Bacteriology (see page 73). Two half-days per week for two Terms.

ADAPTATION TO EXAMINATION REQUIREMENTS

Victoria First M.B. Elementary course and Practical No. 2, or one day Laboratory per week.

Edinburgh or Dublin. The same.

London Prel. Sci. (Med.). Elementary course, Winter and Summer Session, Practical No. 2, and additional Laboratory work for Volumetric Analysis.

Conjoint Board Students. Elementary course at 3 p.m. (Autumn Term) and Special course (Lent Term) on Monday, Wednesday, and Friday, at 9.30 a.m., and Practical No. 2.—Winter Session.

Dental Students. Autumn Term, Elementary course on Monday, Tuesday, and Friday, at 3 p.m.; and Lent Term, Monday, Wednesday, and Friday, at 9.30 a.m.; Part of Practical No. 2.—Winter Session.

London Intermediate M.B. Organic Chemistry. Course C in the first year and Laboratory, two half days per week during the second year after passing the First M.B., are recommended; but the Lectures and Laboratory may be attended in the same year if desired.

D. P. H. Twice each week Laboratory work for Two Terms.

Fees

The Victoria First M.B. fee of £24 15s. includes three Terms—Elementary Chemistry Lectures, and Practical Class No. 2.

London Prel. Sci. (Med.). The Composition fee includes the same classes as Victoria. The Laboratory work on Volumetric Analysis is not included.

London Intermediate M.B., according to the classes taken. A Composition fee of £8 admits to one course of Lectures and two half days per week Laboratory for one year.

Conjoint Board £7 4s.

Students referred by the Conjoint Board for three months, £3 3s.

Pharmacy Students, *see special syllabus.*

Dental Students (included in Composition).

A charge of 12s. 6d., payable to the Laboratory, is made for classes 1 and 2, for the use of materials and apparatus, and students are not expected to provide their own apparatus in these classes.

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PHYSICS

Professor: Vacant

Demonstrator: WALTER H. DERRIMAN

The complete course of Physics given at the College extends over four years, but for Medical Examinations the first one or two years are sufficient.

FIRST YEAR COURSE

For the First M.B. (Victoria) Examination the course is specially arranged to include everything necessary, provided Mechanics has been taken at the Entrance in Arts Examination. The subjects are:—

Autumn Term.—Heat and General Physics, including the Laws of Energy.

Spring Term.—Electricity and Magnetism.

Summer Term.—Light and Sound.

The class meets four times a week, as follows:—Lectures on Tuesday and Thursday, 12.30-1.30; Exercise class or Supplementary Lecture on Monday, 4-5; Practical class on Monday or Friday morning at 9.30 or some other arranged time.

Fees for the complete first year course (included in the first M.B. Composition fee)—One Term, £3; Two Terms, £4 15s.; Three Terms, £6.

SECOND YEAR COURSE

Students preparing for the Preliminary Scientific M.B. London, may find it desirable to attend the second year course also during the **Spring Term.** All three terms will suffice for Honours. The second year class meets three times a week:—

Experimental lecture on Wednesday, 12.30-1.30; Lectures on Tuesday and Thursday, 4-5.

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The subjects taken are :—

Autumn Term.—Heat and Thermodynamics.

Spring Term.—Electricity, more advanced.

Summer Term.—Light, more advanced.

Fees.—One Term, £2; Two Terms, £3; Three Terms, £4.

For further details, see the University College Calendar.

NATURAL HISTORY

Professor: W. A. HERDMAN, D.Sc., F.R.S.

Demonstrator: FRANK J. COLE.

Laboratory Assistants: W. A. GUNN. T. MERCER.

'Fisheries' Assistant: JAMES JOHNSTONE.

Elementary Biology

Autumn and **Lent Terms.**—Monday, Wednesday, and Friday, 11.30-12.30 p.m.

This course is intended as an introduction to the study of Zoology, Botany, and Physiology, and will consist of about sixty lectures on the Morphology, Physiology, and life-history of typical members of the leading groups of organisms.

The following is an outline of the course :—

Brief account of the structure and life-history of a higher plant for comparison with animals. The Frog as a typical animal, its structure, and elementary histology and physiology. Protoplasm, its composition and properties. Cells, and cell-division, animal and plant tissues. Ovum and spermatozoon, fertilization, and the embryology of *Amphioxus* and the Frog.

Protozoa and Protophyta: *Amœba*, *Vorticella*, *Paramœcium*, *Gregarina*, *Torula (Saccharomyces)*, *Bacterium*,

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Protococcus and *Spirogyra*: their structure and life-histories. Comparison between plants and animals: their characteristics. Fermentation and Putrefaction.

The Metazoa, unicellular and multicellular animals, Reproduction. *Hydra*, its structure, physiology, and life-history. The Leech, the Earthworm, *Arenicola*, Parasitism, Segmentation, Cœlomata Invertebrata.

The Cray-fish, the Cockroach, *Anodon* and *Mytilus*.

The Vertebrata: *Amphioxus* and the Dog-fish—the characters and classification of the Vertebrate groups. Development of the Chick. The Rabbit—characters of the Mammalia.

Fee.—For the Course, £3; for One Term, £2.

PRACTICAL BIOLOGY

A Practical Class of Elementary Biology will be held in connection with the above Lecture course on Tuesdays and Thursdays, during the **Autumn Term** from 9.30 to 11.30, and during the **Lent Term** from 10.30 to 12.30. The work will consist of the dissection and microscopic examination of the series of typical animals discussed in the lectures.

Text Books.—Marshall and Hurst, *Practical Zoology*; Huxley and Martin, *Practical Biology*; Marshall, *The Frog*.

Fee.—£2 each Term; for the Demonstrations alone, £1.

Conjoint Board Revisal Class

This class is compulsory for all students referred at the first examination of the Conjoint Board. It is held in each term, and includes such Lectures, Practical Work, and Tutorial Classes as may be available and appropriate.

Fee.—£3 3s.

ZOOLOGY.—General Course

Monday, Wednesday, and Friday, 9.30-10.30, or at the hour found most convenient, throughout the Session.

This course of over eighty lectures will deal with:

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I. The general principles of Biology, Protoplasm, the Cell, Animal Tissues, Organs and their functions, Development, Evolution, and Phylogeny.

II. The Comparative Anatomy, Embryology, Taxonomy, Phylogeny, and distribution of the classes and orders of animals.

This course will meet the needs of students preparing for Honours in the London Preliminary Scientific (M.B.), and Intermediate Examination in Science, and for the Victoria or London Final B.Sc.

TEXT BOOKS.—Huxley, *Manuals of the Invertebrata* and *Vertebrata*; Claus, *Zoology* (translated by Sedgwick); Gegenbaur, *Elements of Comparative Anatomy* (translated by Professor Jeffrey Bell); Herdman, *Phylogenetic Classification of Animals*.

Fee.—£4. For each Term, £2.

COMPARATIVE ANATOMY

Honours students in Physiology, or any others requiring a course on Comparative Anatomy, should consult Professor Herdman.

ZOOLOGY.—Summer Course

The Summer Term in Zoology begins on May 1st.

A course of lectures will be given, if required, in the Summer Term daily at 9.30 a.m.

Fee.—£3.

REVISAL CLASS.—Practical and Lectures

Summer Term. — Monday, Wednesday, Friday, 11.30 a.m. to 1.30 p.m.

This class is intended for students preparing for the Victoria First M.B., or Intermediate in Science, or London Preliminary Scientific or Intermediate Examination, who have attended the Elementary Biology courses during the **Autumn** and **Lent Terms**, and feel the need of carrying on their work during the summer. It is also suitable

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for Conjoint Board Candidates referred in Elementary Biology in April, and preparing for the July examination.

The work on Mondays and Fridays will be practical, and will consist of a rapid revisal of all the types, while on Wednesdays there will be Lectures and Demonstrations on the Embryology and Comparative Anatomy of the Vertebrate types.

Fee.—£2 10s.

The Wednesday Lectures (forming a short course on Comparative Anatomy and Embryology) may be taken alone at a fee of £1.

EMBRYOLOGY

Summer Term.—Tuesday and Thursday, 11.30-12.30.

This course will treat of the Reproduction and Embryology of the chief groups of the Invertebrata and Vertebrata, and will conclude with a few lectures on Organogeny. It is obligatory for the Victoria Final B.Sc. (Zoology Honours).

TEXT-BOOKS.—Marshall, *Vertebrate Embryology*; Haddon, *Elements of Embryology*; Balfour, *Treatise on Comparative Embryology*.

Fee.—£1 7s. 6d.

A special Laboratory course will be arranged for any members of the above lecture class who wish to work practically at Embryology.

COMPARATIVE OSTEOLOGY

Summer Term.—Two days a week.

A series of Osteological Demonstrations will be given at an hour arranged to suit students. The Osteology of all the leading types of the Vertebrata, and the dentition of the Mammalia will be discussed and illustrated by specimens.

Fee.—£1 7s. 6d.

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ZOOLOGICAL LABORATORY

The Laboratory will be open to advanced students from 10 a.m. to 5 p.m. throughout the Session. The work, which will consist chiefly in the dissection and microscopical examination of typical animals from the Invertebrate and Vertebrate classes and orders, will be arranged to suit the requirements of students. Facilities will be given as far as possible to those wishing to work at any particular group, or to carry out original research.

Fee.—£2 10s. a Term for each full day per week.

A fee of 5s. is charged for the hire of microscopes for the Term, or 10s. for the Session.

PORT ERIN LABORATORY

The Marine Biological Laboratory, Port Erin, Isle of Man, is now open for research work to advanced students. Those wishing to work at the Laboratory should apply to Professor HERDMAN, the Director. The Council of the College has recently acquired the right to have one of the work places at the Biological Station reserved for the use of College students and others, nominated by the Professor of Natural History.

BOTANY

Professor : R. J. HARVEY GIBSON, M.A., F.L.S.
Demonstrator : CHARLES E. JONES, B.Sc., F.L.S.

LECTURES

Lent Term.—Monday and Wednesday, 10.30-11.30 a.m.

Summer Term.—Monday, Wednesday, and Friday, 10.30-11.30 a.m.

The lectures in the Summer Term will be devoted to the discussion of the Anatomy and Physiology of the following types :—*Bacterium*, *Saccharomyces*, *Eurotium*, *Vaucheria*, *Fucus*, *Polytrichum*, *Aspidium*, *Pinus*, *Scilla*, *Cheiranthus*, *Tilia*.

Fee for the course.—£3.

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PRACTICAL

Lent Term.—Thursday, 2-4 p.m.

Summer Term.—Tuesday and Thursday, 10.30-12.30.

The work of the Practical class will include the examination of the types discussed in the Lectures.

Fee.—£3.

TEXT-BOOKS.—D. H. Scott, *Structural Botany*; J. Bretland Farmer, *Botany*.

The Botanical Laboratory is open for the use of advanced students from 10 a.m. to 5 p.m. throughout the Session.

For further details respecting Science and Pharmaceutical Lecture Courses, Practical Classes, and Laboratory work, see the College Syllabus.

BIOLOGICAL COURSES REQUIRED BY MEDICAL STUDENTS

A. Victoria First M.B., and London Preliminary Science Examinations.

(1) Elementary Biology, Lectures and Practical; (2) Botany, Lectures and Practical; (3) Zoology, Revisal Class (optional). These classes, except the Optional Revisal Classes, are covered by the First M.B. Composition fee of £24 15s. 0d.

B. Conjoint Board First Examination.

(1) Elementary Biology, Lectures; (2) Elementary Biology, Practical (Autumn Term), Demonstrations (Lent Term); (3) Zoology, Revisal Class, if referred in April.

Students for other Medical Degrees, and all Science students, should consult Professors HERDMAN and HARVEY GIBSON as to the most suitable courses for their purposes.

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II. SECOND AND THIRD YEAR COURSES

ANATOMY

Professor: A. M. PATERSON, M.D.

Senior Demonstrator and Assistant Lecturer: T. R. W. ARMOUR, M.B.

Demonstrators: D. DOUGLAS-CRAWFORD, F.R.C.S.; E. M. STOCKDALE, M.R.C.S., L.R.C.P.

Gee Fellow and Junior Demonstrator (1899): G. C. WALKER, M.B., D.P.H.

WINTER SESSION

I. Descriptive Anatomy

Daily, Saturdays excepted, at 10.30 a.m. (Wednesdays at 11 a.m.).

In this course a systematic account is given of the development and structure of the tissues and organs comprising the Human Body. The lectures are fully illustrated by drawings, preparations, and recent dissections; and demonstrations are given from time to time of the naked eye and microscopical structures described.

BOOKS.—Quain's *Anatomy*; Morris's *Anatomy*; Ward's *Osteology*.

Each student is strongly advised to provide himself also with a disarticulated skeleton, and a disarticulated skull.

Fee.—£5 5s.

II. Practical Anatomy

The Dissecting Room is open from 9 a.m. to 5 p.m. daily, except Saturday, when it closes at 1 p.m. The Practical Course is under the immediate supervision of the Professor, assisted by the Demonstrators. Special demonstrations are given from time to time in the Dis-

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secting Room. In the Dissecting Room and Anatomical Museum adjoining it, numerous plates, dissections, frozen sections, and specimens of human and comparative anatomy are provided for the use of students. A number of books of reference, and a valuable series of anatomical plates, are kept in the department, and are accessible to students.

Books.—Cunningham's *Practical Anatomy*; Ellis's *Demonstrations*.

Fee.—£3 3s.; for 3 months, £2 2s.

III. Anatomical Demonstrations

Monday, Wednesday, and Friday, at 4 p.m.

In this course it is intended to describe, by demonstrations of recent dissections, the topographical anatomy of the human body. Special attention is paid to superficial and sectional anatomy, in their bearing on the practice of medicine and surgery. Students are examined orally on the parts during the demonstrations.

Fee.—£2 2s.

IV. Tutorial Classes

A.—*Junior Students.*

1. *Medicals.*—Monday, Wednesday and Friday, at 9.30 a.m.

2. *Dentals.*—Tuesday and Thursday at 4 p.m.

This class is held in connection with the Systematic course, for the purpose of more detailed examination of the bones and joints, and is compulsory for all Junior students.

B.—*Senior Students.*

Tuesday, Thursday, and Saturday, at 9.30 a.m.

Tutorial classes for Senior students are held during the Winter Session. Special classes are also provided for students preparing, in particular, for the higher Examinations. These classes are open to all members of the Systematic or Practical classes without further payment. Details of the arrangements will be announced during the Session.

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SUMMER SESSION

I. Practical Anatomy

AS IN WINTER

Fee.—£2 2s.

II. Tutorial Classes

1. *A tutorial class for Junior students*, for instruction in Osteology, is held on Monday, Wednesday, and Friday, at 9.30.

2. *A tutorial class for Senior students* is held as in Winter, on Tuesday, Thursday, and Saturday, at 9.30.

These classes are available to all members of the Practical class.

III. Lectures and Demonstrations

Monday, Wednesday, and Friday.

1. A course of demonstrations in *Topographical Anatomy* is given during the Summer Session at 10 a.m.

2. A course of demonstrations is given at 4 p.m. in *Superficial and Surgical Anatomy*, to meet the requirements of students preparing for their Final Professional Examinations.

Fee.—£2 2s. (for each course).

IV. Human and Mammalian Embryology

A Laboratory course in this subject is held during the Summer Session. The class is intended for Senior students and Practitioners, and includes :—

1. A short course of lectures.
2. A series of microscopic demonstrations.
3. A three months' Laboratory course of Practical Embryology.

Fee.—£3 3s.

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Revisal Class.—This class meets twice a week in each Term, and is held by the Senior Demonstrator. It is compulsory for all students who have been referred in Anatomy by the London Conjoint Board.

Fee.—For one Term, £3 3s.

PHYSIOLOGY

Professor: C. S. SHERRINGTON, M.A., M.D., F.R.S.

Assistant Lecturer in Chemical Physiology:
A. S. GRUNBAUM, M.A., M.D., M.R.C.P.

Assistant Lecturer and Senior Demonstrator:
J. S. MACDONALD, M.A., M.R.C.S.

Demonstrator of Dental Histology: J. A. WOODS, L.D.S.

Holt Fellow and Junior Demonstrator (1899):
R. J. EWART, M.B., B.Sc.

WINTER SESSION

I. Lectures

A systematic course of lectures on PHYSIOLOGY is given from October to March on Monday, Tuesday, Thursday, and Friday, at 11.30.

A class examination in connection with the above course will be held twice in each Term, on the results of which the Class Medal will be awarded. Diploma students must attend the course in their second Winter Session, in association with the Practical classes held during the Autumn Term. University students are permitted to attend the course during two Winter Sessions, and are strongly advised to do so.

Fee.—£5 5s.

II. Practical Physiology

PRACTICAL PHYSIOLOGY, Part i.—During the **Autumn Term** (October, November, December), a course of Practical Physiology will be held, comprising exercises in

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Chemical and Physical Physiology, excluding the use of quantitative and graphic methods. This course is to be attended by all Diploma students in their second Winter Session, and by University students during their third Winter Session at the College. The class will meet on Tuesdays at 2 o'clock, and on Fridays at half-past one o'clock, commencing Tuesday, October 3rd. All students must provide themselves with small scalpel, fine forceps, scissors, a seeker, mounted needles, silk, cotton, small glass syringe, and drawing-book.

Fee.—£2 2s.

PRACTICAL PHYSIOLOGY, Part ii.—A special course, comprising exercises in Chemical and Physical Physiology, involving quantitative and graphic methods, will be given from January to March. The course is adapted to meet the requirements of the Universities, the Conjoint Examining Board in London, and the First Fellowship Examination of the College of Surgeons. Conjoint Board students are not obliged to attend, but are strongly advised to do so. The class will meet on Mondays at 2 o'clock, on Fridays at 1.30 o'clock, and on Wednesdays at 9.30 a.m.

Fee.—£4 4s.

III. Physiological and Histological Demonstrations

Through the Autumn and Lent Terms, Demonstrations in Experimental Physiology and in Histology are given on Tuesdays and Fridays. The course includes experiments not visible usefully to a large audience, or that require fixed apparatus or too prolonged observation for illustration of the ordinary lecture course. A large series of microscopical preparations are demonstrated in accompaniment of the experiments. Students attending will be questioned orally from time to time. Tuesdays at 4 p.m., Fridays at 3.30 p.m.

Fee.—£2 2s.

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TUTORIAL CLASS.—A Tutorial Class for Senior students is held during the second half of the Session. Special classes will also be arranged, if required, for special examinations. These classes are open to all members of the Systematic or Practical classes, without further payment.

SUMMER SESSION

HISTOLOGY

I. Lectures

A course of lectures on HISTOLOGY is given from May to July, on Tuesday and Thursday at 2 p.m. This course is in connection with that of Practical Histology, and should be attended by all students in their first Summer Session. Each lecture is followed by a demonstration of microscopical preparations.

II. Practical

A systematic course of Practical Histology will be held on Monday, Wednesday, and Friday, 11 to 1.30. Each member of the class must provide, for his own use, microscope slides, cover glasses, pencil, drawing-book, section lifter, mounted needles, six watch glasses, small glass syringe, razor, fine scissors, fine forceps, small scalpel, and a soft dusting cloth. Before entering upon this class each student is strongly advised to furnish himself with a reliable microscope ; among the makers of reliable instruments, of modern cost, Swift & Sons, London, can be recommended. A limited number of microscopes may be hired from the Laboratory by members of the class at a payment of 10s. per Term, but this course is not advised ; the best of the Laboratory instruments are reserved for demonstration purposes.

Fee.—(Lectures and Practical) £5 5s.

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PHYSIOLOGY

I. Lectures

CHEMICAL PHYSIOLOGY LECTURES.—A course of lectures on Chemical Physiology will be given, by the Assistant Lecturer, on Wednesdays at 2 p.m.

II. Practical

This class is held on Monday, Wednesday, and Friday at 2 p.m. It comprises lectures and exercises in Chemical and Experimental Physiology, with Histology.

Fee.—£3 3s.

TUTORIAL CLASS.—A Tutorial Class for Senior students will be held twice a week as in Winter, at hours to be arranged.

Fees.—Lectures, Physiology and Histology, £5 5s.; Histology alone, £2 2s.; Practical Physiology, Summer Session, £3 3s.; Practical Histology, £5 5s.

PHYSIOLOGICAL LABORATORY.—The Laboratory is open from 10 to 5 throughout the Session, under the direction of the Professor. *Fees.*—£2 per Term for each day that the Laboratory is used per week, or 5s. for each single day of five hours.

REVISAL CLASS.—This class meets twice a week in each Term, and is held by the Demonstrator. It is compulsory for all students who have been referred by the London Conjoint Board in Physiology. *Fee.*—For one Term, £3 3s.

TEXT-BOOKS.—*Physiology*, Foster, Stewart, Waller; *Histology*, Huber, Schäfer, Stirling; *Physiological Chemistry*, Halliburton.

MATERIA MEDICA AND THERAPEUTICS

Professor:

WILLIAM CARTER, M.D., B.Sc., LL.B., F.R.C.P.,
Physician to the Royal Southern Hospital.

Demonstrator: P. H. MARSDEN.

These two courses are given on alternate days of the week at 9 a.m., during the **Summer Term**; the Materia

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Medica course on Tuesday, Thursday, and Saturday; Therapeutics on Monday, Wednesday, and Friday.

That on **Materia Medica** includes :—

1. The general nature and composition, and the most important physical and chemical characters of the drugs included in the British Pharmacopœia.

2. The composition of the official preparations of these drugs, the processes employed in making them, and the mode of recognizing their common impurities.

3. The doses of these drugs, and of their preparations.

The student will be exercised in the actual recognition of the most important drugs.

Fee.—£2 2s.

The course on **Pharmacology and Therapeutics** comprises a consideration of the action of drugs (so far as it has been determined by experimnent) on the different organs of animals in health; and a detailed statement of the effects of all the more important ones on diseased conditions.

Fee.—£4 4s.

The Materia Medica Museum, now placed in the Medical School Buildings, has been completely reorganised, and is accessible to students during ordinary College hours.

A TUTORIAL CLASS, available for all students attending the Systematic course on Materia Medica, is held in the Museum by the Demonstrator, on Fridays, at 9 a.m.

PRACTICAL PHARMACY

Lecturer : P. H. MARSDEN

A three months' course in this subject is held in the Dispensary of the Royal Infirmary on Mondays and Thursdays, or Tuesdays and Fridays, at 3 p.m., commencing in October, January, or May.

Fee.—£2 2s.

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FORENSIC MEDICINE AND TOXICOLOGY

Professor: F. T. PAUL, F.R.C.S., *Surgeon to the Royal Infirmary*

Demonstrator: R. J. M. BUCHANAN, M.D., M.R.C.P.

Summer Session.—Tuesday, Thursday, and Saturday, at 9 a.m., at Ashton Hall (School of Hygiene).

The course consists of about 36 lectures, and is intended to instruct students in the special branches of medical knowledge required for legal purposes. The following subjects are dealt with :- -

The position of medical witnesses in the courts of law, and the relation of medical men generally to the various legal processes.

The Forensic aspect of death. Putrefactive, and allied changes in the body. Post-mortem examinations for medico-legal purposes.

Questions of age, sex, identity, etc.

Toxicology. All the important poisons are separately considered, and the details of a toxicological analysis demonstrated to the class.

Wounds and other injuries, examination of blood-stains.

Drowning, hanging, strangulation, and suffocation.

Pregnancy. Abortion. Concealment of Birth. Infanticide. Rape, etc.

Insanity.

Life Insurance.

Books.—Guy and Ferrier. Dixon Mann. Luff. Taylor and Stevenson *(Manual)*.

Fee.- £4 4s.

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PRACTICAL TOXICOLOGY

This course of practical instruction is conducted in the School of Hygiene (Ashton Hall). It includes detection of the principal alkaloidal poisons; the separation from organic matter of the principal mineral and other poisons in the Victoria University and London University List; and the examination of blood and other stains.

Fee.—£3 3s.

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III. FOURTH AND FIFTH YEAR COURSES

GENERAL PATHOLOGY

Professor : RUBERT BOYCE, M.D.

Assistant Lecturer and Senior Demonstrator :
J. H. ABRAM, M.D., M.R.C.P., *Assistant Physician to the Royal Infirmary.*

Demonstrators : W. B. WARRINGTON, M.D., M.R.C.P.
H. R. JONES, M.A., M.D., D.P.H.

Holt Fellow and Junior Demonstrator :
E. E. GLYNN, B.A., M.B. (1899).

Alexander Fellow : A. S. GRIFFITH, M.B., Ch.B.

Research Assistant (Bacteriology) :
C. BALFOUR STEWART, B.A., M.B.

The study of Pathology is carried on during both the Winter and Summer Sessions in the Pathological and Bacteriological Laboratories. The course is divided into three parts, which should be taken in the following order :—

1. Morbid Anatomy, Autumn Term.
2. Bacteriology, Lent Term.
3. General Pathology, Summer Session.

Fee for the whole course (Lectures and Practical), £8 8s. ; for courses 1 and 2, £4 4s. ; for course 3, £4 4s.

1. *Morbid Anatomy.*—The class meets on Mondays and Fridays, at 4 p.m., for the study of this subject, both

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naked eye and microscopic. The students learn the technique required in Morbid Histology, and are given prepared sections typical of all but the rarest forms of disease. In order to facilitate and complete the work of demonstration, each section, as it is examined by the student, is projected by means of the arc lamp on the screen. In addition to these Practical Demonstrations, a special Revisal Lecture, fully illustrated by specimens, is given every Wednesday, at 4 p.m.

Students are allowed the use of the Laboratory to prepare their work and cut sections.

All students must provide themselves with slides, cover-glasses, needles, etc., and are strongly recommended to buy suitable, good microscopes. The latter are to be hired at the Laboratory at a charge of 5s. for the course.

2. *Bacteriology.*—This class is a continuation of the above during the second half of the Winter Session. It meets on Mondays and Fridays, at 4 p.m., for the study of Bacteriology in its relationship to Medicine. The course consists of practical work and lectures, and is framed to familiarize the students with the special technique and the methods of conducting Bacteriological diagnosis of cases of Tuberculosis, Diphtheria, Typhoid, Cholera, Gonorrhœa, Anthrax, Glanders, Tetanus, Ophthalmic and Skin Diseases. The student will also have the opportunity of studying the tissue changes produced by the chief pathogenic organisms.

3. *General Pathology.*—The lectures on this subject are given on Monday, Wednesday, and Friday, at 4 p.m., during the Summer Session. They include the subjects of Inflammation, Fever, Disorders of Nutrition, and the Diseases of the Vascular, Respiratory, Renal, Alimentary, and Nervous Systems. They embody the knowledge gained in the previous courses, and are fully illustrated by lantern slides, microphotographs, preparations, and experiments.

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A detailed syllabus of each of the above courses can be obtained from the Professor.

A Tutorial Class, with demonstrations, is held on Saturdays.

Museum Classes

Medical Pathology : Dr. ABRAM.

Surgical Pathology : Dr. THELWALL THOMAS.

Gynæcological Pathology : Dr. WALLACE.

Classes are held throughout the year for men preparing for Final Examinations.

Fee.—Six months (£2 2s.), three months (£1 1s.).

Post-Mortem Examinations

Holt Fellow, and Clerks.

Post-mortem Examinations are made daily at the Royal Infirmary, at 11.45 a.m. Every student is required to undertake a Clerkship in turn, and to make himself practically acquainted with the methods of Post-mortem Examination, and the Microscopical Demonstration of diseased tissues.

Neural Pathology

W. B. WARRINGTON, M.D., M.R.C.P.

A series of Demonstrations are given in the course of the Winter and Summer Sessions.

N.B.—A Museum containing specimens illustrating the various forms of Nervous Diseases has been formed by Dr. Wiglesworth, at the County Asylum, Rainhill.

Bacteriology in Relation to Hygiene

Demonstrator : H. R. JONES, M.D., D.P.H.

The course in *Bacteriology* includes the methods of bacteriological investigation and the bacterial analysis of air, water, soils, foods, etc. The chief pathogenic and

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non-pathogenic organisms are submitted to careful study, special attention being paid to Cholera, Typhoid, Tuberculosis, etc., and to the diseases of animals communicable to man.

See Special Syllabus of the Public Health Department.

Tropical Pathology

Lecturer: MAJOR ROSS, late I.M.S.

Demonstrator: H. E. ANNETT, M.D.

Instruction will be given in the Summer, Autumn, and Lent Terms.

See Special Syllabus of the School of Tropical Medicine.

Special Courses

Special Courses of Laboratory instruction in *Bacteriology*, *Morbid Histology*, and *Chemical Pathology* are given in each Term, and students may join at any time. *Fee for each Course*, £5 5s.

Research Work.—Every facility will be given to Senior students and others desiring to make special investigations. In addition to the Laboratory Staff, assistance will be given to workers by Dr. Grünbaum and Dr. Hill.

Pathological Diagnosis Society

(Open to all Practitioners.)

Professor: RUBERT BOYCE, M.D.

DR. WARRINGTON.

This Society receives and reports upon Morbid Products. Examinations of suspected Diphtherial Material and Typhoid Blood.

Annual fee, 10s. 6d.

See Society's Report for further information.

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PRINCIPLES AND PRACTICE OF MEDICINE

Professor: T. R. GLYNN, M.D., F.R.C.P., *Physician to the Royal Infirmary.*

Winter Session.—Tuesday, Thursday, and Saturday, 9.15 a.m.

General Ætiology and Symptomatology of Disease. Classification and Nomenclature.

General Acute Diseases:—Specific Fevers, Malarial Fevers, Cholera, Dysentery, Erysipelas, and Pyæmia.

Other General Diseases:—Rheumatism, Gout, Syphilis, Scrofula, Tuberculosis, Scurvy, Purpura, Anæmia, Diabetes, Obesity.

Diseases of the Brain, Spinal Cord, and their membranes. Diseases of the Nerves. Functional Diseases of the Nervous System. Diseases of the Heart and its membranes. Diseases of the Blood-vessels. Diseases of the Larynx, Air Passages, Lungs, Pleuræ, and Mediastinum. Diseases of the Alimentary Canal, Liver, Pancreas, Spleen, Supra-renal Capsules, Lymphatic Glands, and Peritoneum. Diseases of the Kidneys and Bladder. Diseases of the Skin. Climatology.

Tropical Diseases.—Special Lectures will be given on the Diseases of Tropical Climates in connection with the course.

Books.—Bristowe, *Theory and Practice of Medicine*; Taylor, *Handbook of Medicine*; Broadbent, *Handbook of Medicine*; Roberts, *Practice of Medicine*; Niemeyer, *Text-Book of Medicine.*

Practical Medicine.—A class of Practical Medicine, fulfilling the regulations of the Royal Colleges of Physicians and Surgeons, is held at the Royal Infirmary on Tuesdays, at 11.15 a.m. It may be attended either in Winter or Summer.

Fee.—£5 5s. first course. £3 3s. second course. Practical Medicine, £2 2s.

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SURGERY

Professor : RUSHTON PARKER, M.B., B.S., F.R.C.S., *Surgeon to the Royal Infirmary.*

Assistant Lecturer and Demonstrator :
W. THELWALL THOMAS, F.R.C.S., *Assistant Surgeon to the Royal Infirmary.*

Holt Fellow and Junior Demonstrator :
E. E. GLYNN, B.A., M.B. (1899).

The Lectures and the Practical course should, as a rule, be attended together. Both divisions of the subject form part of each Class Examination.

WINTER

I. LECTURES

Monday, Wednesday, and Friday, at 9.15 a.m.

A systematic course, embracing the Principles of Surgery and Surgical Pathology, illustrated with diagrams, original drawings, and photographs, under the following heads :—

The sources and degrees of injury, and their various appearances on the surface or in the deeper parts of the body.

The pathological effects of injury, destructive and reparative, in the phases of the inflammatory process.

Simple inflammation: its products, appearances, and results.

Fermentative processes and agents: their harmless or injurious effects on the tissues and system :—

On the tissues (acute suppuration, spreading ulceration, gangrene, boil, carbuncle).

On the system (traumatic infective diseases and allied febrile processes).

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The antiseptic principle, and the treatment of inflammation.

Other specific diseases.

A course of lectures, five or more, on the surgery of the mouth, including:—Congenital deformities, accidents in tooth-drawing, fractures of the jaws. Diseases of the gums, jaws, lips, tongue, and mouth generally.

The operations of Surgery, performed on the dead body by the Practical Class, under the direction of the Professor.

Fee.—£5 5s.

II. Practical Surgery

Tuesday and Thursday, at 3 p.m.

A course of bandaging, surface-making, and the use of splints on the living body, with the exhibition and explanation of various instruments and appliances.

A course of Operations on the dead body by the class, each member of which thus performs several, under the direction of the Professor or Demonstrator, lasting about one month.

Fee.—£4 4s.

SUMMER

Operative Surgery.—This extra course, required by all candidates for the Fellowship of the English College of Surgeons, and the Higher University degrees in Surgery, is held during the Summer Session. Each member of the class performs a complete course of operations upon the dead body, under the superintendence of the Professor or Demonstrator. Qualified men and others desiring this course should send in their names at the beginning of the Summer Session.

Fee.—£4 4s.

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OPHTHALMOLOGY

EDGAR A. BROWNE, F.R.C.S. Ed., *Consulting Surgeon to the Eye and Ear Infirmary.*

Summer Session.—Tuesday and Thursday, 3 p.m.

The course consists of eighteen lectures, and is intended to instruct students in the elementary facts of Eye-disease, with especial reference to the wants of general practitioners.

In connection with the course, the Lecturer and the acting staff of the Eye and Ear Infirmary give clinical and ophthalmoscopic demonstrations, at hours to be arranged, at the Hospital and in the Medical School.

Students are required to take these lectures as a part of their Theoretical Surgery, and examination schedules will not be signed unless this has been done.

Fee—£1 1s.

TEXT-BOOKS.—Macnamara, Nettleship or Swanzy, *Handbook*; Edgar Browne, *How to use the Ophthalmoscope.*

MIDWIFERY AND GYNÆCOLOGY

Professor: H. BRIGGS, M.B., F.R.C.S. Eng., *Ex-officio Honorary Medical Officer to the Lying-in Hospital; Surgeon to the Hospital for Women.*

Demonstrator: A. J. WALLACE, M.D., *Obstetric Physician to the Ladies' Charity and Lying-in Hospital, and Assistant Surgeon, Hospital for Women.*

Obstetric Assistant: (Vacant).

Winter Session. — *Systematic Lectures*, Monday, Wednesday, and Friday, at 3 p.m.

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Summer Session. — *Advanced Practical Obstetrics and Gynæcology*, Tuesday, Thursday, and Friday, at 9 a.m.

The Summer Course is open to all past and present members of the Class of Midwifery and Gynæcology, who are preparing for Final Examinations.

Fee.—£2 12s. 6d. (included in the Composition Fee).

Midwifery

(INCLUDING PRACTICAL OBSTETRICS)

Ovulation, menstruation, fertilization.

The physiology and pathology of pregnancy, labour, and the puerperal period, in the following order :—

The development of the placenta, the varieties of placentæ ; the fœtus, in-utero, at the several months, at term ; the full-term uterus ; the maternal general changes of pregnancy.

Normal labour, mechanism, and management. The puerperal period, its events, management. The new-born child, infant hygiene.

Diseases of the maternal and fœtal envelopes ; diseases, local and constitutional, (1) of the fœtus, and (2) of the mother ; intra-uterine death of the fœtus. Abortion, premature labour. Ectopic pregnancy. Abnormal labour, etiology and treatment. Obstetric operations. Eclampsia, insanity, etc.

The new-born child, diseases and accidents

Gynæcology

(SYSTEMATIC AND PRACTICAL).

The anatomy of the female pelvic organs ; malformations ; the etiology of diseases of the female generative organs ; disorders of menstruation ; methods in gynæ-

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cological diagnosis; sterility; diseases of the external genitals, vagina, uterus, tubes, ovaries, etc.; displacements of the uterus; pelvic inflammation; hæmatocele. Gynæcological operations will be described and performed on the organs from the dead body.

Gynæcological and Obstetrical Pathology

A bench in the Thompson Yates Laboratories is reserved for the use of the Professor and assistants.

Museum Demonstrations.—Winter Session, Wednesdays; Summer Session, Saturdays, 9.15 a.m. Members of the class are admitted to the Museum Demonstrations on the Pathology of the Female Generative Organs.

Fee.—£5 5s. Second course, £2 12s. 6d.

CLINICAL MIDWIFERY

(OUTDOOR MATERNITY DEPARTMENT)

Students beginning this part of their curriculum are advised to give in their names to the Professor or his Assistant at the commencement of the Autumn, Lent, or Summer Term.

The practice of the Ladies' Charity and Lying-in Hospital (average over 2,000 cases annually) is open to the attendance of students during any part of the year.

The Obstetric Assistant, Dr. Willett, will directly supervise the work of the students in this department.

Students are advised to reside at Brownlow House, the official residence of Dr. Willett, where board and lodgings are provided on application to the Steward. Lodgings, 10s. a week.

Fee.—£4 4s.

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PUBLIC HEALTH.

Professor: E. W. Hope, M.D., D.Sc., *Medical Officer of Health.*

Assistant Lecturer: (Vacant).

Summer Session. — Monday, Wednesday, and Friday at 3 p.m., at Ashton Hall (School of Hygiene).

The course consists of about 30 Lectures and Demonstrations, given during the Summer Session.

Air. Ventilation and warming of dwellings and hospitals. Cubic space; quantity of air; tests of sufficient ventilation.

Water. Water-supply, constant and intermitting services; wells, cisterns, quantity. Hard, soft, and rain water. Outlines of water analysis; import of foreign constituents. Baths and wash-houses.

Sanitary and insanitary dwellings. Overcrowding. Regulation of sub-let houses; common lodging-houses; emigration houses; canal boats.

General sanitary circumstances affecting health and disease. Disposal of the dead. Nuisances, abattoirs. Offensive trades.

Sanitary engineering as affecting the work of the Medical Officer of Health. Sewers; drains; water-closets. Sewage and excrement disposal. Paving. Scavenging, cleansing, and removal of refuse. Soils and sites. Meteorology as applied to enquiries affecting conditions of public health.

Medicine in its relation to the prevention of disease. Contagious and epidemic diseases. Vehicles of infection. Air, water, milk, clothing, etc. Measures for staying the spread of infection. Isolation. Disinfection. Vaccination. Quarantine. Temporary and permanent hospitals. Methods of procedure, and the nature of proof required in sanitary investigations.

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Vital Statistics. Statistical methods and data.

General summary of the laws relating to public health. Sanitary districts and authorities—urban, rural, and port; their duties. Duties of Medical Officers of Health and Inspectors of Nuisances.

Opportunities will be given to students to become practically acquainted with sanitary works carried on in the city, and with the physical appearances of unsound meat, etc.

Fee.—£4 4s.

The Museum of Hygiene (Ashton Hall) is accessible to students during College hours.

MENTAL DISEASES

JOSEPH WIGLESWORTH, M.D. Lond., F.R.C.P.,
Medical Superintendent, Rainhill Asylum.

Summer Session.—Tuesdays and Thursdays, 5 p.m.

This course, which is delivered at Rainhill Asylum, is a combined systematic and clinical one, and consists of a series of lectures upon the leading types of insanity, with subsequent demonstration of actual cases.

Mania, Melancholia, Delusional Insanity, Dementia, Idiocy, General Paralysis of the Insane, etc.

Visits are also paid to, and clinical instruction given in, the wards of the asylum.

Instruction is given in Lunacy Law, and the signing of Lunacy Certificates.

The course is compulsory for students preparing for Victoria University degrees.

A *Neurological Museum* has been formed in connection with the Pathological Department at Rainhill Asylum. It contains a large collection of specimens and models illustrative of the chief nerve lesions.

Fee.—£1 11s. 6d.

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DISEASES OF CHILDREN

P. DAVIDSON, M.A., M.B., *Physician to the Infirmary for Children.*

Summer Session.—Thursdays, 2—4 p.m.

A short course of lectures will be delivered at the Children's Hospital, Myrtle Street, on :—

The examination and treatment of sick infants.

The natural and artificial feeding of infants.

The common diseases in infancy and childhood.

Clinical demonstrations will be given in the Wards and in the Out-patient Department after each lecture.

The *Robert Gee Prize* (value £5 5s.) is awarded on the results of the class examination.

Fee.—£1 1s.

VACCINATION

N. E. ROBERTS, M.B., D.P.H., *Lecturer. Examiner under the Local Government Board.*

The class will be held at 17, Mulgrave Street, commencing the second Tuesday in January; second Tuesday in May; second Tuesday in October, at 3 p.m.

Six attendances are required, four of which must be consecutive.

The course embraces the theories and principles of Vaccination, the Etiology of Vaccina, rationale of protection, views of immunity, re-vaccination, historical *resumé*, etc. Practical instruction in Vaccination, constitutional and local effects, the storage of Lymph, abnormal conditions, Laws relating to Vaccination.

Fee.—£1 11s. 6d.

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INFECTIOUS DISEASES

N. E. ROBERTS, M.B., D.P.H. (*Lecturer*).

R. I. RICHARDSON, M.B.

The Authorities of the Liverpool City Hospitals are prepared to allow students to attend courses of clinical instruction under the control of the physicians. The course must be taken out in accordance with the following regulations:—

(1) Every student must take out a three months' course in the following manner:—

A period of six weeks' clinical instruction must be taken under Dr. Richardson at the Netherfield Road Hospital, and a second period of six weeks under Dr. Roberts at the Grafton Street Hospital; all applications for the course must be made in writing to Dr. N. E. Roberts, 17 Mulgrave Street.

(2) The fee for the full course must be paid in advance to the Physician of the Hospital, and a card of admission obtained.

(3) No student will be allowed in the Hospitals without an admission card.

(4) The Physicians attend the Hospitals every week-day at 2.30, at which hour only students can be admitted.

(5) Every student is required to attend at least three days per week in order to obtain a certificate of attendance signed by the Physicians.

Fee.—£3 3s.

Winter Session, commencing second Monday in October; Summer Session, second Monday in May.

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PUBLIC HEALTH COURSES

Qualifying for Diplomas in Sanitary Science

Every facility is now afforded for training in Sanitary Science and State Medicine. The City of Liverpool and its Port afford exceptional advantages for the study of Public Health. Under the Medical Officer of Health there are some 95 inspectors employed in the Sanitary administration of the city, including the regulation of the food supply, the supervision of factories, workshops, and lodging-houses, the control and limitation of infectious diseases, port sanitation, etc. In addition, the city fever hospitals are always supplied with zymotic disease in every phase. There are now special bacteriological laboratories devoted to the practical study of the diseases of man and animals, and to the investigation of the purity of air, water, foods, etc. The Chemical Department of the College, further, is admirably equipped for training in water and food analysis.

The *Curriculum* for the various D. P. H. Examinations demands (1) a six months' course of Practical Instruction in Sanitary Science, (2) a six months' course of Laboratory Instruction in Chemistry and Bacteriology, and (3) Practical Instruction in Infectious Diseases.

The courses may be taken out at any time, and students are allowed to work daily in the Laboratories.

Fees.—A Composition fee of £21, payable at the commencement of the course, includes the courses in Chemistry, Bacteriology, Practical Sanitation, and Tutorial Classes.

Separate Fees.—Chemistry, £5 5s.; Bacteriology, £5 5s.; Practical Sanitation, £10 10s.; Tutorial Classes, £7 7s; Infectious Diseases, £3 3s.

For the Regulations for the D.P.H. Courses and Examinations, see special Prospectus of the Public Health Department.

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THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE

In Association with University College and the Royal Southern Hospital

This School is governed by a committee representative of University College, the Royal Southern Hospital, and the Merchants and Shipowners of Liverpool.

The objects of the school are (1) Study and Research in Tropical Diseases: (2) Organization of Expeditions for Investigation in the Tropics: (3) the Training of Medical Men and Nurses intending to proceed to the Tropics.

There are exceptional facilities for the study of Tropical Medicine in the Hospitals of Liverpool. The Royal Southern Hospital possesses a special ward with clinical room attached, devoted entirely to the treatment of Tropical Diseases. Systematic Lectures and Laboratory Instruction are given in the Medical School and in the Thompson Yates Laboratories of University College.

Students of the school must be qualified men, or must have completed at least four years' medical study. In other cases special application must be made.

Staff of the School

The Professor of Pathology.
The Physicians and Surgeons of the Royal Southern Hospital.

Lecturer on Tropical Medicine:
MAJOR RONALD ROSS, late I.M.S.

Demonstrator: H. E. ANNETT, M.D.

Inquiries in regard to courses of instruction, fees, etc., should be addressed to the secretary, A. H. Milne, Esq., Chamber of Commerce, Liverpool.

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THE ROYAL INFIRMARY

This hospital, having been rebuilt on an enlarged and improved scale, was reopened to patients in November, 1890. It stands upon the old ground, adjacent to University College, reaching to Pembroke Place, where the entrance and administrative frontage are now situated. Abundant space has been obtained to provide recreation ground for the inmates, and to permit the free access of air and sunlight to all parts of the building, which is also provided with numerous balconies for the use of patients and the resident medical and nursing staff. Internally the requirements of improved sanitary science have been carefully regarded. The wards, some parallelograms, some circular, have floors of waxed oak blocks, laid on concrete, supported by iron beams. The inner walls are faced with glazed bricks of various colours, and the ceilings with a smooth cement, all capable of being easily cleaned.

The warming of the building is effected by hot-water pipes and open fire-places, and the ventilation by air-shafts and windows; in each case by two systems which can be used together or separately.

For the purposes of Clinical practice and teaching, there are three theatres for surgical operations, and one for clinical lectures; the out-patient department is provided with sets of consulting rooms for medical, surgical, and casualty purposes, and for those of the diseases special to the eye, nose, throat, and skin, and for venereal diseases in male patients.

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The domain of morbid Anatomy is provided with a theatre and small laboratory, where this necessary department of study can be properly investigated and demonstrated. There is an electrical room, and provisions for various kinds of baths; and also a room for the Medical and Surgical Registrars, and for the records kept by them of the patients admitted under the care of the physicians and surgeons. A special Röntgen Ray department has been recently added.

The wards are arranged in eight separate clinics, with an honorary physician or surgeon, and a resident assistant attached to each, and to seven of them a 'clinical room,' in which to interview patients and conduct microscopical and chemical tests. There are seven sets of isolation wards, a ward for sick nurses, and a set of pay wards for private patients.

The eight resident medical and surgical officers have each his own bedroom and private sitting room, in addition to common rooms for meals and recreation.

Two senior students are attached to the ambulance, worked by the City Police in the Infirmary district, during day-time. These 'ambulance officers' assist also in the casualty and other clinical work.

A large waiting room near the door is set apart for the use of clinical clerks, dressers, and other students of the hospital, for whom there is, besides, ample cloak-room and lavatory accommodation.

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THE HONORARY AND TEACHING STAFF OF THE ROYAL INFIRMARY

Consulting Physicians

A. T. H. WATERS, M.D., F.R.C.P.
A. DAVIDSON, M.A., M.D., F.R.C.P.

Consulting Surgeons

J. HAKES, M.R.C.S. E. R. BICKERSTETH, F.R.C.S.

Consulting Surgeon to the Lock Hospital

F. W. LOWNDES, M.R.C.S.

Physicians

T. R. GLYNN, M.D., F.R.C.P.
R. CATON, M.D., F.R.C.P. JAMES BARR, M.D., M.R.C.P.

Surgeons

Sir W. M. BANKS, M.D., F.R.C.S.
RUSHTON PARKER, M.B., B.S., F.R.C.S. F. T. PAUL, F.R.C.S.

Gynæcological Surgeon

T. B. GRIMSDALE, B.A., M.B.

Surgeon to the Lock Hospital

A. BERNARD, M.A., M.B., L.R.C.S. Ed.

Assistant Physicians

T. R. BRADSHAW, B.A., M.D., M.R.C.P., and
J. HILL ABRAM, M.D., M.R.C.P.

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Assistant Surgeons

R. A. BICKERSTETH, M.A., M.B., F.R.C.S.
G. HAMILTON, M.B., F.R.C.S.
W. THELWALL THOM.AS, FR.C.S.

Oculist

T. H. BICKERTON, M.R.C.S.

Laryngologist

J. MIDDLEMAS HUNT, M.B.

Dermatologist

H. LESLIE ROBERTS, M.D.

Pathological Superintendent

R. W. BOYCE, M.B.

Dental Surgeon

E. J. M. PHILLIPS, M.R.C.S., L.D.S.

Physician to the Electrical Department

T. R. BRADSHAW, B.A., M.D., M.R.C.P.

Chloroformists

W. FINGLAND, L.R.C.S. Ed.
F. W. BAILEY, M.R.C.S.

Medical Registrar and Tutor

A. G. GULLAN, M.D., F.R.C.S.

Surgical Registrar and Tutor

J. P. NIXON, M.B., Ch.B.

Secretary to the Medical Board

JAMES BARR, M.D., 72, Rodney Street.

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TIMES OF ATTENDANCE OF THE PHYSICIANS AND SURGEONS

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. GLYNN	*12	12	12	*12	12	12
Dr. CATON	12½	*12½	1	12½	*12½	12½
Dr. BARR.....	12½	12½	*12½	12½	12½	*12½
Sir W. M. BANKS & Mr. HAMILTON ..	*1	1	1	*1	1	1
Mr. PARKER and Mr. THELWALL THOMAS	1	*1	1	1	*1	1
Mr. PAUL and Mr. R. BICKERSTETH	1	1	*1	1	1	*1
Dr. GRIMSDALE	2	*2	2	*2	2	2

SURGICAL OPERATIONS.—These are performed in the large operating theatre by Sir Wm. Banks on Tuesday and Friday; by Mr. Parker on Wednesday and Saturday; and by Mr. Paul on Monday and Thursday. Operations, in the small theatre, are performed by each surgeon on the day following his occupation of the large theatre.

CLINICAL LECTURES.—Lectures on clinical Medicine and Surgery are delivered weekly by the Physicians and Surgeons during the Winter and Summer Sessions, clinical Medicine on Tuesday, at 12.30 p.m., and clinical Surgery on Wednesday, at 12.15 p.m. Punctual attendance on Clinical Lectures is compulsory.

CLINICAL INSTRUCTION IN THE WARDS.—In addition to daily bedside instruction, the Physicians and Surgeons each devote one afternoon in the week to special clinical teaching in the wards, at 12.30 or 1 p.m., Dr. Barr and Dr. Grimsdale on Monday, Dr. Caton and Sir Wm. Banks on Wednesday, Dr. Glynn and Mr. Parker on Thursday, and Mr. Paul on Friday. Students, who are not specially attached as clerks or dressers to any one teacher, have thus an opportunity of systematically watching the progress of the cases in the various Medical and Surgical wards.

* Taking-in days.

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TROPICAL DISEASES.—A special course of Lectures on Diseases of Tropical Climates will be given by the Physicians to senior students.

PRACTICAL MEDICINE.—Dr. Glynn gives practical instruction in Clinical Medicine and the methods of Physical Diagnosis on Tuesdays, at 11.15, in both Winter and Summer Sessions.

OUT-PATIENT DEPARTMENT.—This department is conducted by the Physicians, Assistant Physicians, and Assistant Surgeons. Students should avail themselves of the opportunities thus afforded of acquiring a practical knowledge of the diagnosis and treatment of diseases.

CLINICAL GYNÆCOLOGY.—Dr. Grimsdale delivers a course of lectures and gives practical instruction in the Thornton wards and in the Out-patient department during the Session to senior students.

Fee.—£3 3s. (included in the Composition fee).

SPECIAL DEPARTMENTS

LOCK HOSPITAL.—Dr. Bernard gives instruction in the Lock Hospital on Saturdays, at 1 p.m.

OPHTHALMOLOGY.—Instruction in the diagnosis and treatment of Diseases of the Eye, and the use of the Ophthalmoscope, is given on Tuesday and Friday, at 3 o'clock. On Wednesday, at 3 o'clock, operations on the Eye are performed, and, at 4 o'clock, a Clinical Demonstration given. The London Conjoint Board now require a certificate of three months' attendance in Clinical Ophthalmology. Students are therefore encouraged to act as Ophthalmic Dressers for three months. Advanced students may obtain the post of Ophthalmic Clinical Assistant for a period of not less than six months.

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THROAT AND NOSE.—Students can acquire a practical acquaintance with the Diseases of the Throat and Nose, and experience in the use of instruments, under the supervision of Dr. Middlemas Hunt. Demonstrations are given, both in the Winter and Summer Sessions, on Tuesday and Thursday, at 3 o'clock. Dr. Hunt gives a course of Lectures in the Summer on Diseases of the Throat.

SKIN.—Demonstrations on Diseases of the Skin are given by Dr. Leslie Roberts, every Monday and Friday, at 3 o'clock.

ELECTRICAL DEPARTMENT.—Demonstrations of the application of Electricity in Diagnosis and Treatment are given by Dr. Bradshaw, in the Electrical Room, on Wednesdays, at 2.30.

THE ROENTGEN RAYS.—An apparatus has been provided in the Photographic room, under the care of Mr. Marsden. Demonstrations are given at 3 o'clock, on Wednesdays, to which senior students are invited.

MEDICAL AND SURGICAL REGISTRARS AND TUTORS.—These gentlemen attend in the wards at 10 each morning, the Medical Tutor in the wards of each physician on the days immediately following his receiving days, and the Surgical similarly in the surgical wards. They keep the records of the cases, and instruct students in case-taking and the elements of Clinical Observation. The attendance of Clerks and Dressers is compulsory.

PRACTICAL PHARMACY.—A practical course of instruction in Pharmacy and the compounding of medicines is conducted by Mr. Marsden, in the Royal Infirmary Dispensary.

Fee.—£2 2s.

POST-MORTEM EXAMINATIONS.—These are made, and instruction is given in Morbid Anatomy, by the Pathologist, at 12 noon.

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FEES FOR HOSPITAL PRACTICE AND CLINICAL LECTURES

	Medical.	Surgical.	Gynæcological.
Three Months - -	£3 15 0	£5 5 0	—
Six Months - - -	6 6 0	7 7 0	3 3 0
Twelve Months - -	7 7 0	10 0 0	—
Perpetual - - -	—	42 0 0	—
Dental - - -	—	10 10 0	—

The fee for a perpetual ticket may be paid in two equal instalments, one-half on entrance, and the remainder within twelve months.

The fees for Hospital Practice at the Royal Infirmary are payable to Dr. Barr, 72, Rodney Street, between the hours of 10 and 11.30 a.m.

INFIRMARY APPOINTMENTS OPEN TO STUDENTS OF THE COLLEGE

HOUSE PHYSICIANS AND SURGEONS.—Three House Physiciancies, three House Surgeoncies, one House Surgeoncy to the Lock Hospital (with honorarium of £20 for each six months), and one House Surgeoncy to the Thornton Wards, each tenable for six months, are open to students of the College who have obtained a legal qualification. In cases where there are more applicants than vacancies, the appointments may be made by competitive examination. The full medical care of the patients in the wards under their charge devolves upon the House Officers in the absence of the Honorary Staff, and it is their duty to carry into execution the orders of the Physicians and Surgeons in all matters of medical treatment, to exercise control over the Clerks and Dressers, and to assist, as far as possible, in furthering the clinical instruction of the students. The value of these appointments cannot be over-estimated.

AMBULANCE OFFICERS.—Two senior students hold these appointments for three months at a time. Each is on duty on alternate week-days, from morning till evening, and takes his meals with the resident Medical Officers.

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For all the above clinical appointments application must be made in writing to the Secretary of the Medical Board, Dr. Barr.

CLINICAL ASSISTANTS.—Students who have completed their clerking and dressing can obtain appointments as Clinical Assistants in the Out-patient departments Gentlemen should apply to the Secretary of the Medical Board.

CLINICAL CLERKS AND DRESSERS.—Clinical Clerk, are appointed by the Medical Board to each Physician. Dressers to each Surgeon, and Clerks to the Thornton Wards for the Special Diseases of Women. They hold office for three months, and are appointed in October, January, and May of each year. Only those gentlemen who have passed their Anatomy and Physiology Examinations are eligible for these appointments.

POST-MORTEM CLERKS.—Post-Mortem Clerks are appointed by the Pathologist for periods of six weeks at a time, during the Summer and Winter Sessions. Their duty is to assist the Pathologist in the performance of the autopsies, and to enter the records of the cases in the Post-Mortem book. Satisfactory proof of attendance in the Pathological Theatre being now demanded by the English Colleges of Physicians and Surgeons, the Medical Board, in view of this, and of the great importance of the subject to students themselves, have resolved that the *Schedule for the Final Examination will not be signed unless the student produces a certificate from the Pathologist to the effect that he has satisfactorily fulfilled the duty of Post-Mortem Clerk during a period of not less than six weeks, and attended the Post-mortems during the whole period of taking out hospital-work.*

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ROYAL INFIRMARY TIME TABLE

MONDAY	10—12	Case-taking and Tutorial Instruction by Medical Tutor in Wards 10 and 2.
	10—12	" " " Surgical Tutor in Wards 6 and 7.
	12.15	Surgical Out-patient Clinic, Mr. Hamilton.
		Medical Out-patient Clinic, Dr. Glynn.
	12.30—3	Visit and Clinical Instruction in the Wards by Hon. Physicians and Surgeons.
	12.30	Special Clinical Visit by Dr. Barr.
	2	Special Clinical Visit by Dr. Grimsdale.
	2	Demonstration in the Electrical Room, Dr. Bradshaw.
	3	Clinic for Diseases of Larynx, Dr. Hunt.
	3	Clinic for Diseases of Skin, Dr. Leslie Roberts.
TUESDAY	9.15	Examination and Treatment of Dental Cases by Mr. Phillips.
	10—12	Case-taking and Tutorial Instruction by Medical Tutor in Wards 12 and 1.
	10—12	" " " Surgical Tutor in Wards 4 and 9.
	12.30	Medical Clinical Lecture by one of the Hon. Physicians.
	12.30—3	Visit and Clinical Instruction in the Wards by Hon. Physicians and Surgeons.
	12.30	Medical Out-patient Clinic, Dr. Bradshaw.
	1	Surgical Out-patient Clinic, Mr. Thelwall Thomas.
	2	Gynæcological Out-patient Clinic by Dr. Grimsdale.
	3	Ophthalmic Clinic by Mr. Bickerton.
	3	*Revision Class by Mr. R. A. Bickersteth.
WEDNESDAY	10—12	Case-taking and Tutorial Instruction by Medical Tutor in Wards 11 and 2.
	10—12	" " " Surgical Tutor in Wards 5 and 8.
	12.15	Surgical Clinical Lecture by one of the Hon. Surgeons.
	12.30—3	Visit and Clinical Instruction in the Wards by Hon. Physicians and Surgeons.
	12.30	Medical Out-patient Clinic, Dr. Bradshaw or Dr. Abram.
	1	Surgical Out-patient Clinic, Mr. R. Bickersteth.
	1	Special Clinical Visit by Sir W. Banks.
	1	" " " Dr. Caton.

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THURSDAY	10—12	Case-taking and Tutorial Instruction by Medical Tutor in Wards 10 and 2.
	" " "	Surgical Tutor in Wards 6 and 7.
	10—12	Surgical Out-patient Clinic, Mr. Hamilton.
	12.15	Medical Out-patient Clinic, Dr. Abram.
	12.30	Special Clinical Visit by Dr. Glynn.
	1	Special Clinical Visit by Mr. Rushton Parker.
	12.30—3	Visit and Clinical Instruction in the Wards by Hon. Physicians and Surgeons.
	2	Gynæcological Out-patient Clinic by Dr. Grimsdale, and, in Winter, Clinical Lecture.
	3	Clinic for Diseases of Larynx, Dr. Hunt.
FRIDAY	9.15	*Revision Class by Dr. Hill Abram.
	9.15	Examination and Treatment of Dental Cases by Mr. Phillips.
	10—12	Case-taking and Tutorial Instruction by Medical Tutor in Wards 12 and 1.
	10—12	" " " Surgical Tutor in Wards 4 and 9.
	12.30	Medical Out-patient Clinic, Dr. Caton.
	12	Surgical Out-patient Clinic, Mr. Thelwall Thomas.
	12.30—3	Visit and Clinical Instruction in the Wards by Hon. Physicians and Surgeons.
	12.30	Lecture on Diseases of Tropical Climates by the Physicians.
	1	Special Clinical Visit by Mr. Paul.
	3	Clinic for Diseases of Skin, Dr. Leslie Roberts.
	3	Ophthalmic Clinic by Mr. Bickerton.
SATURDAY	10—12	Case-taking and Tutorial Instruction by Medical Tutor in Wards 11 and 2.
	10—12	" " " Surgical Tutor in Wards 5 and 8.
	11.15	Pathological Demonstration by Prof. Boyce.
	12	Surgical Out-patient Clinic, Mr. R. Bickersteth.
	12.15	Medical Out-patient Clinic, Dr. Barr.
	12—1.30	Visit and Clinical Instruction in the Wards by Hon. Physicians and Surgeons.
	1	Clinical Instruction at the Lock Hospital, Dr. Bernard.

* These Classes are voluntary, and only for Students who have completed their Clerking and Dressing, and are going up for Final Examination.

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LIST OF STUDENTS

Who have gained Scholarships, Exhibitions, or Gold Medals since 1873

HOLT TUTORIAL SCHOLARS

1886-87.	A. W. Collins, J. E. Gemmell.
1887-88.	Randle Leigh, W. Thelwall Thomas.
1888-89.	R. J. M. Buchanan, C. L. Williams.
1889-90.	G. W. Chaster, J. Gould.
1890-91.	A. J. Chalmers, W. E. Livsey.
1891-92.	A. J. Wallace, J. S. MacDonald.
1892-93.	F. J. Woods, J. Evans.
1893-94.	J. P. Nixon, J. Unsworth.
1894-95.	H. E. Annett, A. G. Gullan.
1895-96.	S. R. Christophers, J. Hay.
1896-97.	H. M. Crake, E. E. Laslett, J. Prentice.
1897-98.	J. E. Dutton, J. A. Watson.

HOLT FELLOWSHIPS

Physiology

1898-99.	A. P. Hope Simpson, M.R.C.S., L.R.C.P.
1899-1900.	R. J. Ewart, B.Sc., M.B., Ch.B.

Pathology and Surgery

1898-99.	P. Nelson, M.B., Vict.
1899-1900.	E. E. Glynn, B.A., M.B.

ROBERT GEE FELLOWSHIP IN ANATOMY

1897-98. W. Graham. 1898-99. F. T. Lovegrove, M.R.C.S., L.R.C.P.
1899-1900. G. C. Walker, M.B., Ch.B., D.P.H.

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LYON JONES SCHOLARS (Senior)

R. Honeyburne	1878.	V. B. Bennett	1888.
A. Barron	1879.	J. Evans	1889.
J. W. Ellis	1879.	F. J. Woods	1890.
A. H. Wilson	1880.	H. T. Nixon	1892.
F. C. Larkin	1881.	H. E. Annett	1892.
J. Walker	1881.	J. H. Davies	1893.
F. H. Barendt	1882.	E. E. Laslett	1894.
B. Sumner	1883.	W. Graham	1895.
A. A. Kanthack	1884.	H. M. Fletcher	1896.
W. E. Livsey	1885.	W. J. Young	1897.
H. A. Burrowes	1886.	R. E. Kelly	1898.
R. H. Carlisle	1887.	O. T. Williams	1899.

LYON JONES SCHOLARS (Junior)

A. Barron	1878.	H. E. Annett	1889.
A. H. Wilson	1878.	F. W. Morris	1890.
F. C. Larkin	1879.	E. E. Laslett	1891.
G. W. Chaster	1882.	R. J. Ewart	1893.
A. A. Kanthack	1882.	H. F. Hart	1893.
H. A. Burrowes	1883.	J. W. Miller	1894.
T. J. Sweeney	1884.	R. E. Kelly	1896.
A. J. Chalmers	1885.	D. M. Alexander	1897.
E. Spencer	1886.	A. G. Christian	1898.
F. J. Woods	1887.	H. R. Hurter	1899.
B. Stahlknecht	1888.		

DERBY EXHIBITIONERS

A. H. Wilson	1882.	F. J. Woods	1892.
H. A. Bredin	1883.	J. Unsworth	1893.
G. S. Wild	1884.	H. R. Wilson	1894.
W. G. Moore	1885.	H. C. Watt	1895.
W. T. Thomas	1886.	E. E. Laslett	1896.
J. H. Abram	1887.	A. S. Griffith	1897.
R. J. M. Buchanan	1888.	E. E. Glynn	1898.
J. Gould	1889.	H. M. Fletcher	1899.
J. C. M. Given	1890.	J. L. Dimond	1890.
W. N. Clemmey	1891.		

* After this year one gold medal was given for Anatomy and one for Physiology.

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TORR GOLD MEDALLISTS

(Anatomy and Physiology)

J. T. Smith	1874.	F. J. Knowles	1883.
J. Wiglesworth	1875.	A. A. Kanthack	1884.
T. M. Porter	1876.	G. W. Chaster	1885.
R. Bredin	1877.	E. Hale	1886.
R. Honeyburne	1878.	V. B. Bennett	1888.
A. Barron	1879.	J. Evans	1889.
A. H. Wilson	1880.	F. J. Woods	1890.
W. O. Travis	1881.	H. T. Nixon	1891.
A. W. Collins	1882.	H. E. Annett	*1892.

*JUNIOR GOLD MEDALLISTS

T. W. O. Pughe	1875.	W. E. Livsey	1884.
R. Bredin	1876.	E. Hale	1885.
R. Honeyburne	1877.	R. H. Carlisle	1886.
A. Barron	1878.	A. J. Chalmers	1887.
A. H. Wilson	1879.	F. J. Woods	1889.
W. O. Travis	1880.	E. D. Minshull	1890.
E. P. P. Macloghlin	1881.	H. E. Annett	1891.
G. L. Travis	1882.	S. R. Christophers	†1892.
A. A. Kanthack	1883.		

GOLD MEDALLISTS

Anatomy.—Torr Medal		Physiology.—Holt Medal	
S. R. Christophers	1893	S. R. Christophers	
E. E. Laslett	1894	H. M. Crake	
J. E. Dutton	1895	J. E. Dutton	
H. M. Fletcher	1896	R. J. Ewart	
W. J. Young	1897	S. F. Linton	
J. L. Dimond	1898	J. C. Mann	
J. W. Gelderd	1899	O. T. Williams‡	
G. W. N. Joseph	1900	G. W. N. Joseph, H. McManus	eq.

* For seven years this medal was given by Dr. Bligh.
‡ After this year the Junior Gold Medal was discontinued.
‡ First Holt Medallist.

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SCHOLARS AND PRIZEMEN, 1900

FELLOWSHIPS

Holt Fellowships, 1899-1900 { *Phys.* : R. J. Ewart, B.Sc., M.B., Ch.B.
Path. : E. E. Glynn, B.A., M.B.

Robert Gee Fellowship in Anatomy, 1899-1900.
G. C. Walker, M.B., Ch.B., D.P.H.

Lyon Jones Scholars, 1899-1900 - - *Senior* : O. T. Williams.
" " " - - *Junior* : H. R. Hurter.

Derby Exhibition, 1900 - - - - - - J. L. Dimond.

MEDALS AND PRIZES

Summer Session, 1899

Therapeutics - - { C. W. Budden, Medal.
R. Burnet,
E. C. Roberts, } *æq.*, Certificates.

Materia Medica - { G. W. N. Joseph, Medal.
H. E. Heapy, Certificate.

Histology - - - { G. W. N. Joseph, Medal.
T. H. Barlow,
L. T. Booth,
B. N. Murphy,
H. F. Woolfenden, } *æq.*, Certificates.

Forensic Medicine - { A. R. Jackson, Medal.
John Welsh,
R. Burnet,
C. W. Budden, } Certificates.

Pathology - - { J. L. Dimond,
A. R. Jackson, } *æq.*, Certificates.

Hygiene - - - { C. W. Budden,
John Welsh,
S. F. Linton, } Certificates.

Diseases of Children - P. A. Browne (Robert Gee Prize, £5 5s. 0d., in books).

Dental Subjects - - { H. W. P. Bennette, Medal.
W. H. McMillan, Certificate.

Dental Surgery - - H. W. P. Bennette, (Phillips Scholarship, £10 10s. 0d.)

Dental Mechanics - H. W. P. Bennette, (Mr. Councell's Prize, £5 5s. 0d., in books).

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Winter Session, 1899-1900

Chemistry - - - - { P. Hick, Medal.
T. E. Walker, Certificate.

Biology - - - - { W. L. Waller, Medal.
C. O. Stallybrass, P. Hick, } Certificates.

Anatomy (Descriptive) Seniors { G. W. N. Joseph, Torr Medal.
H. E. Heapy (special prize), H. F. Woolfenden, } Certificates.

" " *Juniors* { C. A. Hughes, H. R. Hurter, } *æq.*, Medal.
W. E. Hewitt, Certificate.

Anatomy (Practical) Seniors - { A. B. Sykes, Prize.
E. F. Hoare, F. Lamb. } Certificates.

" " *Juniors* { W. E. Hewitt, Prize.
E. Gibson, Certificate.

" *(Note-Books)* - H. G. Thompson.

Physiology, Seniors - - { G. W. N. Joseph, H. McManus, } *æq.*, Holt Medal.
A. G. Jeans, H. F. Woolfenden, } Certificates.

" *Juniors* - - H. R. Hurter, Fletcher Prize.
W. E. Hewitt, C. A. Hughes, A. Hendry, D. J. Mulholland, H. G. Thompson, } Certificates.

Surgery - - - - R. E. Kelly, Medal.

Medicine - - - - { A. R. Jackson, Medal.
L. C. Johnson, P. Benington, } Certificates.

Midwifery - - - { J. Welsh, Medal.
J. C. Matthews, Certificate.

DEBATING SOCIETY PRIZES, 1898-9

Papers—1st, A. S. Arkle.
2nd, R. E. Kelly.

Debating—1st, O. T. Williams.
Cases—J. L. Dimond.

Specimens—H. H. Clarke.

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APPENDIX

REGULATIONS FOR EXAMINATIONS

I. *Preliminary Examination.*—Regulations of General Medical Council.

II. *Victoria University.*—Regulations for Degrees in Medicine and Surgery.

III. *Royal College of Surgeons of England, and College of Physicians, London (Conjoint Board).*—Regulations for Diplomas in Medicine and Surgery.

I. PRELIMINARY EXAMINATION IN GENERAL EDUCATION

REGULATIONS OF THE GENERAL MEDICAL COUNCIL

REGULATIONS IN OPERATION FROM JANUARY 1, 1892

The Preliminary Examination in General Education, required to be passed previous to Registration as a Medical Student, is as follows :—

(*a*) ENGLISH LANGUAGE, including Grammar and Composition.

Marks not exceeding five per cent. of the total marks obtainable in this section of the Examination may be assigned to Candidates who show a competent knowledge of Shorthand.

(*b*) LATIN, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors.

(*c*) MATHEMATICS, comprising :—(*i.*) Arithmetic ; (*ii.*) Algebra, as far as Simple Equations, inclusive ; (*iii.*) Geometry, the subject matter of Euclid, Books I, II, and III, with easy deductions.

(*d*) One of the following optional subjects :—

(1) Greek, (2) French, (3) German, (4) Italian, (5) any other Modern Language.

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The Council will not in future, except in certain special examinations, accept any Certificate of Preliminary Examination in General Education, unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been passed at the same time.

Provided that a University Examination required for graduation in Arts, wherein the specified subjects of General Education are included, may be recognized for the purpose of registration.

List of Examining Bodies whose Examinations in General Education will be recognized by the Medical Council as Qualifying for Registration as Medical or Dental Student

I. UNIVERSITIES IN THE UNITED KINGDOM

University of Oxford

(1) Junior Local Examinations (Certificate to include all the required subjects at one time). (2) Senior Local Examinations (Certificates to include the required subjects). (3) Responsions (Certificate to be supplemented by others showing that the required mathematical subjects have been passed in). (4) Moderations (Certificates to include the required subjects). (5) Final Examination for a Degree in Arts.

University of Cambridge

(6) Junior Local Examinations (Certificate to include all the required subjects at one time). (7) Senior Local Examinations (Certificates to include the required subjects). (8) Higher Local Examinations (Certificates to include the required subjects). (9) Previous Examination (Certificates to include the required subjects). (10) General Examination (Certificates to include the required subjects). (11) Final Examination for a Degree in Arts.

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University of Durham

(12) Examination for Certificate of Proficiency (Certificate to include all the required subjects at one time). (13) Preliminary Examination in Arts for Graduation in Medicine and Science (Certificate to include the required subjects). (14) Final Examination for a Degree in Arts.

University of London

(15) Matriculation Examination (Certificate to include the required subject). (16) Final Examination for a Degree in Arts or Science.

Victoria University

(17) Preliminary Examination (Certificate to include all the required subjects at one time). (18) Entrance Examination in Arts (Certificate to include all the required subjects at one time). (19) Final Examination for a Degree in Arts or Science.

University of Wales

(20) Matriculation Examination (Certificate to include all the required subjects at one time). (21) Final Examination for a Degree in Arts or Science.

University of Edinburgh

(22) Junior Local Examination (Certificate to include all the required subjects at one time). (23) Senior Local Examination (Certificates to include the required subjects). (24) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (25) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (26) Final Examination for a Degree in Arts or Science.

University of Aberdeen

(27) Junior Local Examination (Certificate to include all the required subjects at one time). (28) Senior Local Examination (Certificates to include the required subjects). (29) Preliminary Examination for Graduation in Medicine

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and Surgery (Certificate to include the required subjects). (30) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (31) Final Examination for a Degree in Arts or Science.

University of Glasgow

(32) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (33) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (34) Final Examination for a Degree in Arts or Science.

University of St. Andrews

(35) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (36) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (37) Final Examination for a Degree in Arts or Science. (38) Final Examination for the Diploma of L.L.A.

University of Dublin

(39) Public Entrance Examination (Certificate to include the required subjects). (40) Examination for the First, Second, Third, or Fourth Year in Arts (Certificate to be signed in the approved form by the Medical Registrar of the University). (41) Final Examination for a Degree in Arts.

Royal University of Ireland

(42) Matriculation Examination (Certificate to include the required subjects). (43) Final Examination for a Degree in Arts or Science.

Oxford and Cambridge Schools' Examination Board

(44) Lower Certificate (to include all the required subjects at one time). (45) Higher Certificate (Certificates to include the required subjects).

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II. GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM

Scotch Education Department

(46) Examination for Lower Grade leaving Certificate (to include all the subjects at one time).

(47) Examination for Higher Grade or Honours leaving Certificate (to include the required subjects).

Intermediate Education Board of Ireland

(48) Junior or Middle Grade Examination (Certificate to include all the required subjects at one time).

(49) Senior Grade Examination (Certificate to include the required subjects).

Central Welsh Board

(50) Senior Certificate Examination.

III. EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM

College of Preceptors

(51) Examination for First Class Certificate (to include all the required subjects at one time).

Educational Institute of Scotland

(52) Preliminary Medical Examination (Certificate to include all the required subjects at one time).

Royal Colleges of Physicians and Surgeons in Ireland.

(53) Preliminary Examination (Certificate to include all the required subjects at one time).

EXAMINATIONS HELD OUT OF THE UNITED KINGDOM

(54) **University of Malta.**—Matriculation Examination.

(55) **University of Calcutta.**—First Examination in Arts.

(56) **University of Madras.**—First Examination in Arts.

(57) **University of Bombay.**—Matriculation Examination.

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(58) **Ceylon Medical College.**—Preliminary Examination.

(59) **Panjab University.**—Entrance Examination.

(60) **University of Allahabad.**—Intermediate Examination in Arts.

(61) **University of McGill College, Montreal.**—Matriculation Examination.

(62) **College of Physicians and Surgeons of the Province of Quebec.**—Matriculation Examination.

(63) **University of Bishop's College, Montreal.**—Matriculation Examination.

(64) **Universities and Colleges of the Province of Ontario.**—Departmental Arts Matriculation Examination. (Conducted under the direction of the Provincial Education Department).

(65) **University of Manitoba.**—Preliminary and Previous Examinations.

(66) **University of New Brunswick, Fredericton.**—Matriculation Examination.

(67) **University of Mount Alison College, New Brunswick.**—Matriculation Examination.

(68) **College of Physicians and Surgeons of New Brunswick.**—Matriculation Examination.

(69) **Dalhousie College and University, Halifax, Nova Scotia.**—Matriculation Examination.

(70) **Provincial Medical Board of Nova Scotia.**—Preliminary Examination.

(71) **Newfoundland Medical Board.**—Preliminary or Matriculation Examination.

(72) **University of Melbourne.**—Matriculation Examination.

(73) **University of Sydney.**—Matriculation Examination. (74) First Year Examination in Arts. (75) Senior Public Examination. (76) Entrance Examination for Medicine and Science.

(77) **University of Adelaide.**—Senior Public Examination. (78) First Year Examination in Arts.

(79) **University of Tasmania.**—Senior Public Examination.

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(80) **University of the Cape of Good Hope.**—Matriculation Examination.

(81) **University of Otago.**—Preliminary Examination for Medical Students.

(82) **University of New Zealand.**—Preliminary Examination for Medical Students.

(83) **Codrington College, Barbados.**—Examinations qualifying for a Degree in Arts at the University of Durham.

(84) **Foreign Universities in Europe.**—The German Abiturienten-Examen of the Gymnasia and Real-gymnasia ; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe.

(85) **Egyptian Government.**—Secondary Education Certificate.

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II. VICTORIA UNIVERSITY

The Colleges of the University are

OWENS COLLEGE, MANCHESTER
UNIVERSITY COLLEGE, LIVERPOOL
YORKSHIRE COLLEGE, LEEDS

The following summary should be verified by reference to the *Victoria University Calendar* (Cornish, Manchester).

STATUTES AND REGULATIONS FOR DEGREES IN MEDICINE AND SURGERY

I. REGARDING MATRICULATION

1. Students of any College of the University may become Scholars of the University by entering at any College upon a course of study recognized for a degree of the University.

2. All Scholars of the University shall, not later than the 1st of March in each academical year, be presented to the Vice-Chancellor for matriculation on some day or days to be fixed by him in each College, and shall sign the Register of Scholars and undertake to obey the regulations of the University.

3. No Scholar shall be deemed to have fulfilled the regulations of the University as to the attendance required for any degree unless in the first year of attendance he shall have been presented to the Vice-Chancellor for matriculation and have signed the Register, unless exempted therefrom for reasons satisfactory to the Vice-Chancellor.

II. REGARDING THE PRELIMINARY EXAMINATION

[This examination is accepted by the General Medical Council, provided that Latin and either Greek or a Modern Language have been included. It is also accepted by the Incorporated Law Society, provided that Latin has been included; and candidates placed in the First Division, if otherwise duly qualified, are exempted from a year of service under Articles of Clerkship. It is also accepted in lieu of Preliminary or Entrance Examination by the Council of Legal Education, and the Society of Chartered Accountants. By Article 115 (*d*) of the Education Department Code, candidates who passed in the First Division may be admitted to Training Colleges as Queen's Scholars.]

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The Preliminary Examination is held in each College of the University twice in each calendar year. For this examination any person may present himself, subject to the regulations of the University for the time being.

The Preliminary Examination is also held when required for the special purpose of the examination of forms or classes in schools.

Subjects of Examination

1. *English Language and History :*
   - (1) An English Essay.
   - (2) Elements of English Grammar, including outlines of the General History of the English Language.
   - (3) Outlines of English History.

2. *Mathematics :*
   - (1) Arithmetic.
   - (2) The Elementary Geometry of Triangles, Parallelograms, and Circles, and of similar rectilinear figures.*
   - (3) Algebra to Quadratic Equations (inclusive) with Arithmetical and Geometrical Progressions.

3. *Greek :*
   - (1) One prose and one verse book† ; *or*
     Passages from unprepared books, with accompanying Grammar questions.
   - (2) Grammar,‡
   - (3) Translation at sight of easy Greek passages into English.

4. *Latin :*
   - (1) One prose and one verse book § ; *or*
     Passages from unprepared books, with accompanying Grammar questions.

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* These subjects are covered by Euclid i, ii, iii, and vi (1-19 and 33).

† See p. 101.

‡ Candidates must satisfy the Examiners in this part of the examination.

§ See p. 101.

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(2) Grammar.*
(3) Translation at sight of an easy Latin passage into English.
(4) Translation of easy sentences from English into Latin.

5. *French :*

(1) Grammar.†
(2) Translation from two prescibed French books‡ ; *or* Passages from unprepared books, with accompanying Grammar questions.
(3) Translation at sight of French prose into English.
(4) Translation of English passages into French.

6. *German :*

(1) Grammar.†
(2) Translation from two prescribed German books‡; *or* Passages from unprepared books, with accompanying Grammar questions.
(3) Translation at sight of easy German prose into English.
(4) Translation of English sentences into German.

7. Any other Modern Language, permission to present which has been obtained from the Board of Studies.§

8. *Elementary Mechanics :*

The Elementary portions of Statics, Kinetics, and the properties of liquids and gases, including :—

(1) Laws of Motion. (2) Uniform Acceleration. (3) Composition and Resolution of Forces in one plane. (4) Moments of Forces. (5) Work and Energy. (6) Centre of

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* Candidates must satisfy the Examiners in this part of the examination.

† The questions in Grammar will not involve more than Accidence and Elementary Syntax. Candidates must satisfy the Examiners in this part of the examination.

‡ See p. 101.

§ Notice of intention to present this must be made to the University Registrar on or before March 1st of the year in question.

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Gravity. (7) Uniform Circular Motion. (8) Simple Pendulum. (9) Direct Impact. (10) Fluid Pressure. (11) Specific Gravity. (12) Boyle's Law.

SPECIAL BOOKS PRESCRIBED FOR THE PRELIMINARY EXAMINATION FOR 1901

GREEK : Æschylus, *Prometheus Vinctus*; Lucian, *Charon* and *Timon*.

LATIN : Cæsar, *de Bello Civili*, i. cc. 1-55 ; Vergil, *Æneid*, ii.

FRENCH : Mme. de Witt, *Derrière les Haies*; Labiche et Jolly, *La Grammaire*.

GERMAN : W. Hauff, *die Karavane*, pp. 1-4, 29-49, 109-116 (ed. H. Hager) ; *Lessing*; *Fabeln*, pp. 1-22 (ed. K. Breul).

III. REGARDING DEGREES, EXAMINATIONS, AND COURSES OF STUDY IN THE FACULTY OF MEDICINE

1. The Degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

2. All Candidates for Degrees in Medicine and Surgery are required to have satisfied the Examiners in the several subjects of the Preliminary Examination* (Faculty of Medicine),† or to have passed such other Examination as may from time to time be recognized for this purpose by Statute of the University.‡

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* This Statute comes into force in 1901. See changes in Regulations, page 71 (*Victoria University Calendar*).

† Candidates who have passed the Preliminary Examinations (Faculty of Medicine) may proceed to the Examinations for Degrees in Arts, Science, and Law.

‡ The following examinations are recognised :—

i. Graduation in this or some other University of the United Kingdom, provided that Latin has formed part of one of the Degree examinations.

ii. London Matriculation.

iii. Higher Certificate of the Oxford and Cambridge Schools Examination Board. (Certificates must show that the candidate has satisfied the Examiners in Latin, Elementary and Additional Mathematics, English or History, and in either Greek, French, or German. The Mechanical Division of Natural Philosophy will satisfy the requirements in Mechanics.

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Candidates who have passed the Preliminary Examination (Faculties of Arts, Science, and Law), but have not included Latin, Mechanics, and other Greek or a Modern Language, will be considered to have passed the Preliminary Examination (Faculty of Medicine), provided before passing the First M.B. Examination, they satisfy the Examiners in the subject or subjects omitted.

Candidates who have taken Mechanics as one of their subjects, but have failed in that subject, shall be allowed to complete their examination by passing in Mechanics at a subsequent Examination, but such candidates shall not be admitted to graduate in the Faculties of Arts, Science, and Law.

3. The subjects of the Preliminary Examination (Faculty of Medicine) are:—

(1) English Language and English History.

(2) Mathematics.

(3) Latin.

(4) Elementary Mechanics.

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iv. Senior Oxford Local (Honours). (Certificates must show that the candidate has satisfied the Examiners in Latin, Pure Mathematics, English Essay, English History, and in either Greek, French, German, or Spanish. Applied Mathematics (Section D) or Mechanics and Hydrostatics (Section E) will satisfy the requirements in Mechanics).

v. Senior Cambridge Local (Honours). (Certificates must show that the candidate has satisfied the Examiners in Latin, Euclid and Algebra, English Composition, and English History, and in either Greek, French, German, or Spanish. Applied Mathematics (Section H) or Statics, Dynamics and Hydrostatics (Section K) will satisfy the requirements in Mechanics).

Provided that the subjects included in each of the above examinations shall include all the subjects required by the General Medical Council.

If Mechanics has not been included among the subjects of examination, an approved examination in that subject must be passed before the candidate passes the First M.B. Examination.

The Board of Studies has discretionary power to accept other examinations of at least equal standard.

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(5) *One* of the following:—

i. Greek.

ii. French.

iii. German.

iv. Some other Modern Language approved by the Board of Studies.*

4. The names of candidates who have satisfied the Examiners in the Preliminary Examination are published in two divisions, the names of each being in alphabetical order.

Degrees of Bachelor of Medicine and of Surgery

5. Before admission to the Degrees of Bachelor of Medicine and of Surgery a candidate is required to present certificates that he will have attained the age of twenty-one years on the day of graduation, and that he has pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of his registration as a Medical Student by the General Council of Medical Education, two of such years at least having been passed in a College of the University, and one year at least having been passed in a College of the University subsequently to the date of passing the First Examination.

6. All candidates for the Degrees of Bachelor of Medicine and of Surgery are required to have satisfied the Examiners in the several subjects of three examinations, entitled respectively:

The First Examination;

The Second Examination;

The Final Examination.

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* Notice of intention to present this must be given to the University Registrar on or before March 1st of the year in question.

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First Examination for the Degree of Bachelor of Medicine and of Surgery

7. Candidates on presenting themselves for the First Examination, are required to furnish certificates of having attended during at least one year courses in the several subjects of examination, in accordance with the University Regulations for attendance, and to have passed the Preliminary Examination, or such other Examination as may have been recognized by the Statute of the University in that behalf.

8. The subjects of the First Examination are:—

(1) Chemistry, Inorganic and Organic.

(2) Biology (Zoology and Botany).*

(3) Physics.

9. The Examination is divided into two Parts: Part I, Chemistry and Physics; Part II, Biology;† and candidates may pass in these parts separately.

10. The names of candidates who have satisfied the Examiners in either Part of the First Examination are published in alphabetical order.

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* The questions in Biology will have reference to:—

1. The fundamental facts and Laws of Animal Morphology, together with the Elements of Comparative Physiology and Histology, as illustrated by *ten* of the following twelve types:—*Amœba*, *Paramœcium*, *Vorticella*, *Hydra*, *Lumbricus*, *Arenicola*, *Astacus*, *Anodon*, *Mytilus*, *Scyllium*, *Rana*, *Lepus*; and the outlines of the Developmental History of *Amphioxus*, *Rana*, and *Gallus*.

2. The fundamental facts and Laws of the Morphology and Life-History of Plants, together with the Elements of Vegetable Physiology and Histology, as illustrated by the following types:—*Bacterium*, *Saccharomyces*, *Euroteum*, *Vaucheria*, *Fucus*, *Polytrichum*, *Aspidium*, *Pinus*, *Scilla*, *Cheiranthus*, *Tilia*.

In the Practical Examination, candidates will be required to make dissections or microscopical preparations of the animals and plants in the above list; and also to recognise and describe specimens or microscopical preparations of or from the same.

Candidates may, at the discretion of the Examiners, be examined *viva voce* during the Practical Examination.

† Candidates proposing to present themselves for Part II, who have already paid the Examination fee, are required to give notice, in writing, to the Registrar, on or before May 14th or September 7th, as the case may be.

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11. Candidates who have passed the Intermediate Examination in the Faculty of Science in Chemistry, Physics, and Biology will, on payment of the required additional fee, be regarded as having passed the First Examination for the Degrees of M.B. and Ch.B.

Second Examination for the Degrees of Bachelor of Medicine and of Surgery

12. Candidates, on presenting themselves for the Second Examination, are required to furnish certificates of having attended courses of instruction in each of the subjects of examination, in accordance with the University Regulations for attendance, and to have passed the First Examination.*

13. The subjects of the Second Examination are :—

A. (1) Anatomy.
(2) Physiology (including Physiological Chemistry and Histology).

B. (3) Materia Medica and Pharmacy.

Candidates may pass in A or B separately.†

14. The names of candidates who have satisfied the Examiners are published in alphabetical order.‡

Final Examination for the Degrees of Bachelor of Medicine and of Surgery

15. Candidates, on presenting themselves for the Final Examination for the Degrees of Bachelor of Medicine and of Surgery, are required to furnish certificates of having attended courses of instruction in the several subjects of the examination,

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* Registered Practitioners, qualified before January 1st, 1885, are admitted to the Second Examination under special conditions, information as to which can be obtained from the Registrar.

† Candidates proposing to present themselves in A or B who have already paid the fee for the whole examination are required to give notice, in writing, to the Registrar, on or before March 1st or July 1st, as the case may be.

‡ A University Scholarship is awarded on the results of this examination, See p. 116. The results are also taken into account in the award of Honours in the Final Examination.

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in accordance with the University Regulations for attendance, and to have passed the Second Examination for the said Degrees.

16. The subjects for the Final Examination are :—

(1) Pharmacology and Therapeutics.

(2) General Pathology and Morbid Anatomy.*

(3) Forensic Medicine† and Toxicology, and Public Health.

(4) Obstetrics and Diseases of Women.‡

(5) Surgery,§ Systematic, Clinical, and Practical.

(6) Medicine, Systematic, and Clinical,¶ including Mental Diseases and Diseases of Children.

17. Candidates may either present themselves in all the six subjects of Examination on the same occasion, or may pass the

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* Candidates will be examined on museum preparations and microscopic specimens.

† Candidates will be required to conduct a qualitative analysis of poisonous substances selected from the following list :—

Class I (In simple solution.)	Class II (In combination with various organic substances.)
Carbolic acid.	Mineral acids.
Alcohol.	Oxalic acid.
Chloroform.	Hydrocyanic acid and the Cyanides.
Chloral hydrate.	Caustic alkalies.
Strychnine.	Phosphorus.
Brucine.	Compounds of arsenic, antimony, mercury, lead, barium, zinc, copper, and silver.
Morphine.	
Meconic acid.	

They may also be required to determine the character of stains and stained fabrics microscopically and chemically, and to recognise poisonous articles of the materia medica.

‡ Candidates will be required to show their practical acquaintance with obstetrical and gynæcological manipulations and instruments by the use of the phantom or otherwise, and will also be examined on museum preparations.

§ Candidates will be examined on the use of surgical instruments and apparatus, and on museum preparation ; they may also be required to perform operations on the dead body.

¶ Candidates, in order to pass, must satisfy the Examiners in the clinical part of the examination.

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Examination in two parts,* the First Part consisting of *two* or *three* of Subjects (1), (2), and (3); the Second Part of the remaining subjects.

18. Candidates who fail to satisfy the Examiners in the First Part must either present themselves again in the subjects as selected, or in all the three subjects of the First Part, or in all the six subjects of examination.

19. Candidates for the First Part of the Examination must have completed the *fourth winter* of medical study in accordance with the Regulations of the University.

Candidates for the Second Part of the Examination, or for the whole Examination, must have completed the *fifth year* of medical study in accordance with the Regulations of the University.

20. The names of candidates who have satisfied the Examiners (in both Parts of the Examination) are published as follows :—

(1) Those awarded First Class Honours.†

(2) Those awarded Second Class Honours.†

(3) Those who have satisfied the Examiners.

The names are in alphabetical order in each case.

Degree of Doctor of Medicine

21. No candidate will be admitted to the Degree of Doctor of Medicine unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the Examination for those Degrees.

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* Candidates proposing to present themselves for Part II are required to give notice, in writing, to the Registrar, on or before March 1st or July 1st, as the case may be.

† Account is taken of the results of the Second Examination in determining the award of Honours.

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22. Candidates for the Degree of Doctor of Medicine are required to present a printed dissertation* embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine. No candidate will be admitted to the Degree unless his dissertation, after report from the Departmental Board of Medical Studies, shall have been recommended by the General Board of Studies to the Council for acceptance in that behalf. Candidates may be examined on any subject connected with their dissertations.

23. The names of candidates who have been approved for the Degree of Doctor of Medicine are published in alphabetical order.

Degree of Master of Surgery

24. No candidate will be admitted to the Degree of Master of Surgery unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those Degrees.

25. Candidates, on presenting themselves for the examination† for the Degree of Master of Surgery, are required to have graduated as Bachelors of Medicine and of Surgery in the University, and to furnish certificates of having, during the intervening period, satisfied the University requirements for attendance and study.

26. The subjects‡ of Examination are :—

(1) Surgical Anatomy.
(2) Surgery.
(3) Operative Surgery.

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* One hundred copies of this (endorsed 'Dissertation for the Degree of M.D.') must be furnished by the candidates to the Registrar, together with any drawings or specimens (to become the property of the University) which may be necessary to illustrate the dissertation, on or before February 1st in each year. To secure uniformity candidates should communicate with the Registrar as to title-page, &c., of their dissertations.

† Candidates proposing to present themselves for this examination are required to give notice to the Registrar, in writing, and pay the fee on or before June 1st.

‡ Candidates will be liable to examination in Aural and Laryngeal Surgery.

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(4) Clinical Surgery.
(5) Ophthalmology.
(6) Pathology and Bacteriology.

27. The names of candidates who have satisfied the Examiners are published in alphabetical order.

IV. Attendance

For the Degrees of Bachelor of Medicine and of Surgery

1. Candidates, before admission to the Second Part of the Final Examination for the Degrees of Bachelor of Medicine and of Surgery, are required to furnish certificates of having completed five years of medical study. Two of these years must be passed in a College of the University, one at least being subsequent to the passing of the First Examination. The other three years may be passed at any College or Medical School recognized for this purpose by Statute of the University.

Note.—A year of medical study is understood to mean a winter session of six months, and a summer session of three months, and must normally include attendance upon at least two courses of Lectures or Laboratory work in each term in the subjects of the University Examinations for Degrees in Medicine and Surgery, or one such course and attendance upon Hospital practice. The five years of medical study will be reckoned from the date at which the name of the candidate was placed on the register of the General Council of Medical Education.

2. Candidates, on presenting themselves for the First Examination, are required to furnish certificate of attendance during at least one year on the following courses[1] of instruction either in a College of the University or in a College or Medical School recognized for this purpose by Statute of the University:

(1) Chemistry, Inorganic and Organic: Lectures and Laboratory work.
(2) Biology (Zoology and Botany): Lectures and Laboratory work.
(3) Physics: Lectures and Laboratory work.

[1] By 'Course' is meant a *complete* course and not a part thereof.

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3. Candidates, on presenting themselves for the Second Examination for the Degrees of Bachelor of Medicine and of Surgery, are required to furnish certificates of having attended courses* of instruction, approved by the University, either in a College of the University or in a College or Medical School recognized for this purpose by Statute of the University, in the following subjects†:

A. (1) Anatomy.—One winter session.
(2) Physiology.—Two‡ winter sessions.

B. (3) Materia Medica and Pharmacy.—One summer session.

NOTE.—The certificate in Anatomy must in all cases testify that the candidate has been engaged in dissecting during two winter sessions and one summer session at least.

The certificate in Physiology must in all cases testify that the candidate has attended a course of Laboratory instruction approved by the University.

The certificate in Materia Medica and Pharmacy must in all cases testify that the candidate has attended a course of practical instruction in these subjects approved by the University.

4. Candidates, before presenting themselves for a First Part or a Second Part of the Final Examination, are required to furnish certificates of having attended courses§ of instruction, approved by the University, in a College of the University or in a College or Medical School recognized for that purpose by Statute of the University, in the subjects in which they offer themselves for examination.

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* By 'Course' is meant a *complete* course and not a part thereof.

† Candidates presenting themselves in A alone or B alone need only present certificates of attendance in the subjects included in the examination.

‡ *One* Session will, however, suffice, provided that the course attended is a complete course approved by the University.

§ By 'Course' is meant a *complete* course and not a part thereof.

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5. Candidates are required to furnish certificates as follows:

(1) In Medicine and Surgery, of having attended the medical and surgical practice of a hospital or hospitals, approved by the University, during at least three years, of which years two at least must be subsequent to the date of passing the Second Examination, except when exemption has been granted by the General Board of Studies, after report from the Departmental Board of Medical Studies.

(2) In Pathology and Morbid Anatomy, of having attended, during at least twelve months, demonstrations in the post-mortem theatre of a hospital.

(3) In Obstetrics, of having attended during three months the in-door practice of a Lying-in Hospital approved by the University; or of having attended not less than twenty cases of labour, at least five of which shall have been conducted under the direct supervision of a registered practitioner, and of having continued such attendance throughout the puerperal period.

(4) In Diseases of Women of having, during at least three months, received in either a general or a special hospital, approved by the University, such clinical instruction in the diseases peculiar to women as shall be approved by the University.

(5) Of having acquired proficiency in vaccination.

(6) Of having acted as a dresser for six months in the Surgical Wards, and as a Clinical Clerk for six months in the Medical Wards, of a Hospital recognized by the University.

(7) Of having attended courses of instruction approved by the University, in a College of the University or in a Medical School or Hospital recognized for this purpose by Statute of the University, in the following subjects:—

i. Pharmacology and Therapeutics.—One winter or one summer session.

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ii. General Pathology and Morbid Anatomy.—One winter and one summer session.

iii. Forensic Medicine.—One summer session. Public Health.—One summer session.

iv. Obstetrics and Diseases of Women.—Two summer sessions or one winter session.

v. Systematic Surgery.—One winter session. Practical Surgery.—One winter session. Clinical Surgery.—Two years of Clinical Lectures.

vi. Systematic Medicine.—Two winter sessions. Clinical Medicine.—Two years of Clinical Lectures.

The certificate in Medicine must in all cases testify that the candidate has attended, during a summer session or its equivalent, courses of instruction approved by the University in (*a*) Mental Diseases, (*b*) Infectious Diseases.

The certificate in Obstetrics and Diseases of Women must in all cases testify that the candidate has attended courses of practical instruction, approved by the University, in the use of obstetrical and gynæcological instruments.

The certificate in General Pathology and Morbid Anatomy must in all cases testify that the candidate has attended a course of laboratory instruction in these subjects, approved by the University.

For the Degree of Master of Surgery

1. Candidates, before admission to the Examination* for the Degree of Master of Surgery, are required to furnish certificates which shall be deemed satisfactory by the University that they, since taking the Degree of Bachelor of Medicine and of Surgery, have held, for not less than six months, a Surgical appointment in a Public Hospital, or other public institution affording full opportunity for the study of Practical Surgery.

* Candidates proposing to present themselves for this Examination are required to give notice, in writing, to the Registrar, and pay the fee on or before June 1st.

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2. Candidates for the Degree of Master of Surgery are also required to furnish certificates :

(1) Of having attended a special course of instruction on Operative Surgery, approved by the University, and of having personally practised the principal surgical operations on the dead body.

(2) Of having attended a systematic course of instruction, including Practical Work, approved by the University, on Bacteriology.

(3) Of having attended a course on Ophthalmology, and of having received instruction in Ophthalmic Surgery approved by the University.

V. Dates of Examination

1. The Preliminary Examination is held twice in each calendar year, in June and in September.

2. The First Examination is held twice in each year, in June and about the end of September.

3. The Second Examination is held twice in each year, in March and in July.

4. The Final Examination is held twice in each year, in March and in July.

5. The Examination for the Degree of Master of Surgery is held in July.

6. Dissertations for the Degree of M.D. must be sent in on or before February 1st in each year.

VI. As to Members of the University who have been Registered as Students of the Medical Department of University College before February 28th, 1885

1. Students of University College registered before February 28th, 1885, will be admitted to the First Examination provided that they shall have presented the requisite certificates of attendance, and shall have passed a Preliminary Examination in Arts deemed satisfactory by the Council.

2. Students of University College registered before February 28th, 1885, will be admitted to the Second Examination for the Degrees of M.B. and Ch.B., provided that they shall

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have presented satisfactory certificates of attendance, and shall have passed a Preliminary Examination in Arts and a First Examination deemed satisfactory by the Council.

3. Students of University College registered before February 28th, 1885, will be admitted to the Final Examination for the Degree of M.B. and Ch.B., provided that they shall have presented the requisite certificates of attendance, and shall have passed a Preliminary Examination in Arts and in Science, and a First or Intermediate Examination for the Degree of M.B. deemed satisfactory by the Council.

VII. Fellowships and Scholarships

University Fellowships

1. Four Fellowships, designated University Fellowships, shall be offered annually, each of the value of £100, for the term of one year.

2. The object of the University Fellowships shall be the encouragement of study and research, and every Fellow shall be required to devote the whole of the time during which he continues to hold the Fellowship to the pursuit of such study or research, under conditions approved by the Board of Studies. In special cases an additional grant not exceeding £20 may be made to the Fellow by special vote of the Council, to assist him in carrying out his researches.

3. Of the four Fellowships one shall be awarded for excellence and promise in the subjects of one of the Honours Schools of the Faculty of Arts or in the Faculty of Law; another in one of the Honours Schools of the Faculty of Science; another for excellence and promise in one or more of the subjects of the Second or Final M.B. Examination; and the fourth may be awarded in any of the Faculties.

4. No Fellow shall be permitted to hold a University Fellowship in conjunction with any other Fellowship, Scholarship, or Exhibition, except by permission of the Committee, referred to in Clause 10.

5. No Fellow shall be permitted to hold any paid appointment, or to undertake remunerated work, without previous permission from the Committee.

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6. The University Fellowships shall be open to all graduates who have proceeded to the B.A. or B.Sc., or M.B. and Ch.B. Degree with Honours, or the LL.B. Degree in Victoria University, but such graduates shall be eligible only during the eighteen months immediately succeeding their Final Examination in an Honours School or in the Faculty of Law or Medicine.

7. At the expiration of the first tenure of a Fellowship, a Fellow shall, irrespective of the date of graduation, be permitted to submit his name for re-election to a University Fellowship, and it shall be within the power of the Electors thereupon to elect him to a second, but not to any third or subsequent tenure.

8. All candidates for University Fellowships are expected to send in their names in writing to the Registrar on or before June 1st in each year, except for the Medical Fellowship, for which the date is July 1st. They are invited to support their application by submitting any thesis or original research, and by any other evidence of their qualifications that they think fit.

9. Fellows are required to furnish a report of the work done by them during the tenure of their Fellowships, such report to be laid before the Board of Studies.

10. The Election to University Fellowships shall be made by a Standing Committee appointed annually for the purpose by the Board of Studies in the Michaelmas Term. Written reports concerning all candidates shall be drawn up by the Examiners in the School in which such candidates shall have proceeded to a Degree with Honours; and the Committee shall have power to take into consideration such other evidence of qualifications as they may think fit.

11. The annual election of Fellows shall be made as soon as convenient after the publication of the lists of the successful candidates in the several Honours Schools. The election ot the Medical Fellowship shall be made after the July M.B. Examination.

12. In the event of a Fellowship not being awarded in any year, the income may be used to provide an additional Fellowship or additional Scholarships in the same or in any subsequent year.

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University Scholarships

1. At least one University Scholarship, value £25, shall be offered annually on the results of the Final Examination in each of the various Honours Schools in the Faculties of Arts and Science, and at least one Scholarship shall be offered on the results of the Second Examination for the Degrees of M.B. and Ch.B.

2. Candidates for the Scholarship in Medicine must pass in Materia Medica and Pharmacy in July, and in Anatomy and Physiology in the following March, or in all the subjects in March.

3. The Committee shall have power, if it thinks fit, to increase to £50 the stipend of any scholar who is pursuing an advanced course of study in some learned institution, or under other suitable guidance approved by the Committee.

VIII. Regarding Fees to be Paid for Examinations and Degrees

1. The fees for examination are as follows :—

   (1) For the Preliminary Examination, £2 ; and for each subsequent Examination, £1.

   (2) For the First Examination for the Degrees of M.B. and Ch.B., £5 ; and for each subsequent Examination, £2.

   (3) For the Second Examination for the Degrees of M.B. and Ch.B., £5 ; and for each subsequent Examination, £2.

   (4) For the Final Examination for the Degrees of M.B. and Ch.B., £5 ; and for each subsequent Examination, £2.

   (5) For the Examination for the Degree of Ch.M., £5.

2. No fee will entitle to admittance to more than *one* examination.

3. The fees for conferring Degrees are as follows :—

   (1) On conferring the Degree of Ch.M., £5.

   (2) On conferring the Degree of Doctor, £10.

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III

REGULATIONS OF THE EXAMINING BOARD IN ENGLAND

(M.R.C.S., L.R.C.P.)

LECTURES AND CLASSES

First Examination

*Chemistry (including Physics)	1 Course.
*Practical Chemistry	,,
*Elementary Biology	,,
†Practical Pharmacy	3 Months.

Second Examination

Dissections (including the whole body)	12 Months.
Anatomy	6 Months.
Physiology	1 Course.
Practical Physiology (including Histology)	6 Months.

Third and Final Examination

Medicine	6 Months.
Surgery	,,
Midwifery	3 Months.

* These subjects may be studied before Registration at Institutions recognized for the purpose by the Examining Board in England, a list of which may be obtained on application, but time spent in receiving instruction before Registration will not be counted as part of the five years' curriculum of professional study.

† The instruction in Practical Pharmacy must be given by a registered Medical Practitioner, or by a Member of the Pharmaceutical Society of Great Britain, or in a Public Hospital, Infirmary, or Dispensary, and may be taken before registration.

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Practical Medicine, Surgery, and Midwifery (including applied Anatomy, methods of Examination, Examination of morbid products, operations on the dead body, etc.)	1 Course in each.
Pathology (including Pathological Histology and Bacteriology) . . .	3 Months.
Therapeutics	„
Forensic Medicine (including Insanity)	„
Public Health.	1 Course.
Hospital Practice . 2 Winter and 2 Summer Sessions.	
Post-Mortem Demonstrations . . .	12 Months.
Clinical Medicine	9 Months.
Clinical Surgery	„
Gynæcology (12 lectures and practical)	1 Course.
Clinical Clerk	6 Months.
Dresser	6 Months.
Outdoor Midwifery	20 Cases.
Hospital practice (or 6 months and 6 months each at two other recognized institutions)	12 Months.
Vaccination (Practical)	1 Course.
Clinical Ophthalmology	3 Months.
Fever Hospital Practice	Clinical Course.
Mental Diseases	„ „

The Certificates of Professional Study will be required to show that Students have attended the courses of Professional Study to the satisfaction of their Teachers.

Students are required to attend Examinations which are held in the several Classes.

EXAMINATIONS

These are held in January, April, July, and October of each year. The Student, when ready for the Examination, should bring the Certificates of attendance upon lectures to the Dean, who will sign the schedule for him on behalf of the Professors and Lecturers of the Medical Faculty. The candidate must forward his schedule and give notice fourteen clear days before the Examination to the Secretary, and, if he subsequently withdraws, he is not again eligible for six months. Fees must be paid three days before the Examination.

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The First Examination

The subjects of the First Examination are :—

Part I. Chemistry and Physics.
Part II. Practical Pharmacy.
Part III. Elementary Biology.

The Examination is partly written, partly oral, and partly practical.

Synopsis indicating the range of subjects in the Examinations in Chemistry and Physics, Practical Pharmacy and Elementary Biology, may be obtained on application to the Secretary.

A candidate may take this Examination in its three Parts at different times, or he may present himself for the whole at one time. Part II may be taken at any time during the curriculum. Parts I and III may be taken before Registration after a course of study at a recognized institution ; Part II can only be taken after Registration. Candidates referred in one or more parts will not be re-examined until after a period of not less than three months, and in Chemistry, Physics, and Elementary Biology will be required to undertake a further course of instruction for this period.

The Fees for admission to the First Examination are as follows :—

For the whole Examination	£10	10	0
Re-examination after rejection in Part I .	3	3	0
Do. do. Part II .	2	2	0
Do. do. Part III .	2	2	0

A candidate who possesses a Degree in Medicine, British or Colonial, is exempt from examination in the subjects in which he has passed.

Second Examination

The subjects of this Examination are Anatomy and Physiology.

The Examination is partly written, partly oral, and partly practical.

A Synopsis indicating the range of subjects in the Examination in Physiology may be obtained on application to the Secretary.

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Candidates will be required to pass in both subjects at one and the same time.

Candidates will be admissible to the Second Examination at the expiration of two Winter Sessions and one Summer Session (or fifteen months during the ordinary Sessions) from the date of registration as Medical Students, and after the lapse of not less than twelve months from the date of passing Parts I and III of the First Examination, and on producing evidence of having complied with the prescribed Regulations.

NOTE.—Candidates who registered as Medical Students before the 14th July, 1898, will be admissible to the Second Examination after a lapse of not less than six months from the date of passing Parts I and III of the First Examination on production of the required certificates.

Candidates referred will be required to produce certificates of having fulfilled a further period of study in Anatomy and Physiology for not less than three months in a recognized place of study, to the satisfaction of their teachers.

The Fees for admission to the Second Examination are as follows :—

For the whole Examination	£10 10 0
For re-examination after rejection . . .	6 6 0

The Third or Final Examination

The subjects of this Examination are :—

Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy,* Therapeutics, Forensic Medicine, and Public Health.

Part II. Surgery, including Pathology, Surgical Anatomy and Apparatus.

Part III. Midwifery and Diseases peculiar to Women.†

---

* If not taken with First Examination.

† Candidates may present themselves for Examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a Medical School, not less than one year after the passing of the Second Examination, on production of the required certificates.

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The Examination in each subject consists of written papers and an oral part, with specimens. Candidates may present themselves for the three parts of this Examination at one or at different times.

Candidates who have passed the Second Examination will be admissible to the Third or Final Examination on production of the required certificates of study at the expiration of five years (five Winter and five Summer Sessions) from the date of Registration as Medical Students, and at the expiration of four years (four Winter and four Summer Sessions) from the date of passing Parts I and III of the First Examination, and of two years (two Winter and two Summer Sessions) from the date of passing the Second Examination.*

A candidate referred on the Third or Final Examination, or on one or more of the three Parts into which he may have divided it, will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and will be required, before being admitted to re-examination, to produce a certificate, in regard to Medicine and Surgery, of having attended the Medical and Surgical Practice, or the Medical or Surgical Practice, as the case may be, at a recognized Hospital during the period of his reference; and, in regard to Midwifery and Diseases peculiar to Women, a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognized Teacher.

Fees for admission to the Third or Final Examination are as follows:—

		£	s.
For the whole Examination		*15	15
Part I	For re-examination in Medicine, including Medical Anatomy, Pathology, Therapeutics, and Public Health	5	5
	For re-examination in Practical Pharmacy (if taken at this Examination)	2	2

* On and after the 1st January, 1900, the Fee for this Examination will be raised to Twenty guineas.

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Part II.	For re-examination in Surgery, including Pathology, Surgical Anatomy, and Appliances	5 5
Part III.	For re-examination in Midwifery and Diseases peculiar to Women . .	3 3

Every candidate who shall have passed the Third or Final Examination, and who shall have paid the required fees, is, subject to the Bye-Laws of the two Colleges, entitled to receive :—

The licence of the Royal College of Physicians of London, and

The Diploma of Member of the Royal College of Surgeons of England.

Forms of the required Certificates may be obtained of the Secretary of the Examining Board in England, Examination Hall, Victoria Embankment, London, W.C.

N.B.—Exceptions to the conditions of admission to the several Examinations can be granted only by the Committee of Management.

The regulations applicable to candidates registered as Medical Students before the 1st January, 1892, may be had on application to the Secretary.

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STUDENTS WHO HAVE PASSED EXAMINATIONS SINCE JUNE 1899

I. SCIENCE EXAMINATIONS

Victoria University B.Sc. 1899

R. E. Kelly ... } *2nd Class Honours Physiology.*
J. C. Mann ... }

II. MEDICAL EXAMINATIONS

Victoria University

FIRST M.B. July, 1899

E. Gibson, B.A.	G. Laurence.
A. Hendry.	J. F. McCann.
W. E. Hewitt.	R. H. Mole, B.A.
C. A. Hughes.	F. H. Salisbury.
H. R. Hurter.	H. Woods.

September, 1899

J. A. Bligh. | D. J. Mulholland.
H. G. Thompson.

Part I. Chemistry and Physics. July, 1899

D. J. Mulholland. | H. G. Thompson.

Part II. Biology. July, 1899

J. A. Bligh.	G. H. Joseph.
E. S. H. Gill.	W. F. Mitchell.
L. Hutchinson.	L. D. Napier.

September, 1899

A. Warburton. | G. Westby.

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SECOND M.B. July, 1899

D. M. Alexander. | S. W. Davies.
R. Cook. | R. J. Jones.
W. G. Lloyd.

March, 1900

H. M. Berry. | J. A. Johnson.
J. L. Hawkes. | C. O. Jones.
H. E. Heapy. | G. N. W. Joseph.
A. G. Jackson. | R. E. Knowles.
H. F. Woolfenden.
A. G. Christian, *Scholarship.*

Part A. Anatomy and Physiology. July, 1899

A. G. Jackson.

March, 1900

J. P. Bligh. | A. S. Hopper.

Part B. Materia Medica. July, 1899

S. Brown. | H. E. Heapy.
A. G. Christian. | J. A. Johnson.
W. E. Cooke. | G. N. W. Joseph.
R. T. Dobson. | R. E. Knowles.
H. F. Woolfenden.

March, 1900

A. G. Jackson. | A. B. Sykes.
G. F. C. Walker.

FINAL M.B.

Part I. July, 1899

P. Benington. | J. L. Dimond.
H Broad. | A. R. Jackson.
R. Burnett. | L. C. Johnson.
P. J. Caddow. | S. F. Linton.
E. C. Roberts.

March, 1900

J. L. Beddoes. | J. H. Billing.
F. P. Wilson.

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Part II. July, 1899

G. P. Alderson.
P. A. Browne.
R. J. Ewart.
H. M. Fletcher
(*2nd Class Honours*).
J. Howard.
C. H. Ferguson.
J. W. Miller.
T. J. Thomas.
H. West.
L. S. Whitman.

March, 1900

W. H. Broad.
S. S. Depree.
F. T. Lovegrove.

M.D. June, 1899

H. E. Annett, *Gold Medal.*

University of London

Preliminary Scientific. July, 1899

J. T. Lloyd.
D. J. Mulholland.
H. G. Thompson.
T. J. Williams.

January, 1900

G. Laurence.

Intermediate Medicine. July, 1899

H. Pritchard.
O. T. Williams,
3rd Class Honours in Physiology.

Anatomy, Materia Medica, and Inorganic Chemistry January, 1900

W. Ball.

M.D. January, 1900

A. G. Gullan, F.R.C.S.

University of Cambridge

Intermediate Medicine. June, 1899

H. H. Clarke.
J. C. Matthews.

December, 1899

L. B. Hopper.
W. H. Dickinson.

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Royal College of Surgeons, England

Primary Fellowship. November, 1899

J. C. MATTHEWS.

London Conjoint Board

(M.R.C.S. and L.R.C.P.)

FIRST EXAMINATION

Part I. Chemistry and Physics. July, 1899

H. BARDSLEY. | O. W. JONES.

January, 1900

A. M. DOWDALL.

March, 1900

A. RUETE. | M. SPOTSWOOD.

Part II. Practical Pharmacy. July, 1899

T. CAMPBELL. | C. M. HALSALL.

March, 1900

F. A. DRINKWATER.

Part III. Elementary Biology. July, 1899

O. W. JONES. | G. B. MESSENGER.

March, 1900

A. RUETE. | M. SPOTSWOOD.

SECOND EXAMINATION. June, 1899

V. D. OURANOFSKI.

January, 1900

F. BARTON.

March, 1900

T. ST. J. BARRY. | L. T. BOOTH.

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FINAL EXAMINATION. July, 1899

H. M. FLETCHER. | A. M. DODD.

October, 1899

J. S. BYRNE. | H. G. WEBSTER.

January, 1900

T. D. PADDOCK.

March, 1900

W. A. BAILEY. | W J. YOUNG.

Medicine. October, 1899

E. SWALES. | T. J. G. BLAKE.

Midwifery. March, 1900

F. A. DRINKWATER.

Scottish Conjoint Board

(L.R.C.S. and P. Ed. and L.F.P.S. Glasgow)

Pathology and Forensic Medicine. October, 1899

J. SYKES.

Midwifery and Forensic Medicine. April, 1900

G. STONES.

Society of Apothecaries, London

PRIMARY EXAMINATION

Part III. Materia Medica. January, 1900

P. G. SHEPHERD.

FINAL EXAMINATION. June, 1899

W. M. HOCKEN.

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III. DENTAL EXAMINATIONS

Royal College of Surgeons, England

November, 1899

H.W. P. Bennette. | S. Hargreaves.
F. J. Blight. | T. H. P. Kolesar.
H. G. Owen.

May, 1900

H. O. Dickin. | J. N. Taylor.
E. Entwistle.

Royal College of Surgeons, Edinburgh

FIRST EXAMINATION. July, 1899

E. Keatinge.

April, 1900

C. K. Dinn. | W. R. Dinn.

FINAL EXAMINATION. April, 1900

J. Alexander. | H. H. Capes.
E. Keatinge.

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SCHOOL

OF

DENTAL SURGERY

At

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VICTORIA UNIVERSITY

UNIVERSITY COLLEGE LIVERPOOL

MEDICAL FACULTY

SCHOOL

OF

DENTAL SURGERY

PROSPECTUS OF CLASSES

SESSION 1900-1901

AT THE UNIVERSITY PRESS OF LIVERPOOL 1900

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THE MEDICAL FACULTY OF UNIVERSITY COLLEGE LIVERPOOL

Principal

PROFESSOR A. W. W. DALE, M.A.

Chairman

PROFESSOR HERDMAN, F.R.S.

Professors and Lecturers in the School of Dental Surgery

Anatomy	Prof.	A. M. PATERSON, M.D.
Physiology	„	C. S. SHERRINGTON, M.A., M.D., F.R.S.
Dental Anatomy and Physiology	„	F. T. PAUL, F.R.C.S.
Dental Surgery		E. J. M. PHILLIPS, M.R.C.S., L.R.C.P., L.D.S.
Dental Mechanics		E. A. COUNCELL, L.D.S. Eng.
Dental Metallurgy		T. L. BAILEY, Ph. D.
Dental Histology	Prof.	C. S. SHERRINGTON.
Chemistry	„	J. CAMPBELL BROWN, D.Sc., F.I.C.
Materia Medica	„	W. CARTER, M.D., LL.B., F.R.C.P.
Medicine	„	T. R. GLYNN, M.D., F.R.C.P.
Surgery	„	RUSHTON PARKER, M.B., B.S., F.R.C.S.
Clinical Surgery	„	Sir W. M. BANKS, M.D., F.R.C.S. RUSHTON PARKER, M.B., B.S., F.R.C.S. F. T. PAUL, F.R.C.S.
Pathology	„	R. W. BOYCE, M.B.

Assistant Lecturers and Demonstrators

Chemistry	T. L. BAILEY, Ph. D. A. W. TITHERLEY, M.Sc., Ph. D.
Anatomy	T. R. W. ARMOUR, M.B.
Physiology	J. S. MACDONALD, M.A., M.R.C.S.
Pathology	J. H. ABRAM, M.D., M.R.C.P.
Surgery	W. THELWALL THOMAS, F.R.C.S.
Dental Anatomy and Histology	J. A. WOODS, L.D.S. Eng.

Dean of the Medical Faculty

Professor A. M. PATERSON, M.D.

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STAFF OF THE DENTAL HOSPITAL, MOUNT PLEASANT, LIVERPOOL

Consulting Physician

T. R. Glynn, M.D., F.R.C.P.

Consulting Surgeon

Frank T. Paul, F.R.C.S.

Consulting Dental Surgeons

C. Alder, L.D.S.
H. C. Quinby, L.D.S.
W. H. Waite, D.D.S.

Honorary Dental Surgeons

R. Edwards, M.R.C.S., L.D.S. Eng.
W. H. Gilmour, L.D.S. Fng.
J. W. Lloyd, M.R.C.S., L.R.C.P., L.D.S. Eng.
E. H. Mountford, L.D.S. Eng.
J. P. Roberts, L.D.S. Edin.
J. Tindal, L.D.S.
Lewis Osborn, L.D.S. Eng.

Assistant Honorary Dental Surgeons

J. A. Woods, L.D.S. Eng.
A. Drake, L.D.S. Eng.
J. W. Skae, L.D.S. Eng.
J. W. Tomlinson, L.D.S. Eng.

Demonstrator of Operative Dental Surgery

A. Drake, L.D.S. Eng.

Honorary Anæsthetist

F. W. Bailey, M.R.C.S., L.R.C.P.

House Surgeon

F. J. Blight, L.D.S. Eng.

Assistant House Surgeons

F. Lamb.
T. W. Widdowson.

Curator of Laboratory

H. S. Channing.

Warden

W. H. Gilmour, L.D.S. Eng.

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THE MEDICAL SCHOOL

The Liverpool Medical School was formally established in 1834, although before that date organised clinical instruction was given at the Royal Infirmary. On the foundation of University College, the Royal Infirmary School of Medicine was incorporated with it, and both became an integral part of the Victoria University in 1884.

The Medical School forms part of a group of buildings composing University College. It is most conveniently situated in the centre of the city, between the new Royal Infirmary and the recently erected College Buildings. The Dental Hospital is within five minutes' walk. The School buildings comprise the necessary Lecture Rooms and Laboratories, and Museums of Anatomy and Pathology. The Anatomical Museum contains an excellent series of skulls, illustrative of Human and comparative Dental Anatomy, collected by Prof. Paul and others. The Dissecting Room and Anatomical Theatre are lit by the electric light.

New Buildings. — Admirable new laboratories of Physiology and Pathology, provided by the generosity of the Rev. S. A. Thompson Yates, were opened by Lord Lister in 1898. The New Buildings contain a spacious Common Room set apart for the use of Students.

The Medical School is being further extended at present by the provision of Lecture Rooms, Museum, and Laboratories for Anatomy, Surgery, Dental, and other subjects.

A Medical Map of Liverpool is appended to the Syllabus, showing the relative positions of the College and Hospitals.

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DENTAL HOSPITAL

The Liverpool Dental Hospital, Mount Pleasant, founded in the year 1864, is conveniently situated within five minutes' walk of University College.

Over twenty years ago, a Dental School was established in connection with the Hospital. Shortly afterwards, in order to provide adequate accommodation for the increasing numbers who sought relief, and to provide greater facilities for the Dental Officers and Students, the Charity was removed to more commodious premises. The increased utility of the Hospital, and the rapid growth of the School which followed, made further alterations necessary, and five years ago an additional operating room was constructed, capable of holding fifty operating chairs. Particular attention has been paid to the ventilation and lighting of this room, which is acknowledged to be one of the finest in the Kingdom.

Every facility is afforded to Students who are anxious to acquire proficiency in Dental Surgery.

Over 20,000 patients were treated during last year.

The Dental School is now affiliated to the Medical Faculty of the University College, and is managed by a joint committee.

A new Mechanical Laboratory has been built and placed in charge of a skilled mechanic, under the supervision of the Warden of the Hospital. It is well lighted, both naturally and by electricity. Every attention has been paid to ventilation and heating. It is adequately and completely equipped with not only the ordinary fittings of a dental workshop, but all useful modern accessories as well.

Comfortable lodgings, at moderate cost, can be obtained near the Hospital and College.

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GENERAL REGULATIONS

Students are enrolled by Professor PATERSON, the Dean of the Medical Faculty, at the Dean's office, University College, between the hours of 10 a.m. and 4 p.m., during the first week of each session. No Student can become a member of any class until his fees are paid.

All Students, whether holders of Composition Tickets or not, must enrol themselves on the Register within fourteen days after the commencement of each Winter Session, and within ten days after the commencement of each Summer Session. Students desirous of joining later than these dates must make special application to the Managing Committee, stating why they failed to enter themselves during the allowed period.

Every Student on entering is required to sign an obligation of conformity to the rules and regulations of the College. The Medical Faculty will not be responsible for the return of fees forfeited by the irregularity or misconduct of a Student.

The Winter Session comprises the Autumn Term, which commences on the 1st of October and ends before Christmas, and the Lent Term, which commences on the 7th of January and terminates at the end of March. The Summer Session commences on the 1st of May, and terminates at the end of July.

RULES TO BE OBSERVED BY STUDENTS

1. Students are required to be punctual and orderly in their attendance upon Lectures and Demonstrations, to observe decorum in the Dissecting Room and elsewhere, and to adhere rigidly to the regulations relating to the study of the Practical Classes.

2. The Reading-room and Museums are intended for the use of the Students, subject to such regulations as

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may from time to time be issued by the Medical Faculty. No Specimens, Preparations, Medical Journals, or Books of Reference, are to be removed from the School.

3. Students will be required to make good, to the satisfaction of the Medical Faculty, any loss, wilful damage, or injury they may occasion to the property of the School.

4. All Students must enrol themselves on the School Register within fourteen days after the commencement of the Winter Session, and within ten days after the commencement of the Summer Session. Students desirous of joining after these dates must make special application to the Managing Committee, stating why they failed to enter themselves during the allowed period.

5. In order to obtain a certificate of attendance upon Lectures or Practical Classes, the Student must have been present at 75 per cent. of the meetings of the class, including the class examinations. In the event of the attendance being less than this, the certificate will be brought before the Managing Committee and withheld or granted at their discretion.

6. In all cases a certificate may be refused on the ground of the Student not having conducted himself properly.

7. The certificates of each class will be ready on the last day of Lecture, and any Student not receiving his certificate must make immediate application to the Lecturer, as *no schedules can be signed by the Dean without the production of the necessary certificates.*

8. Every Student, before going up for examination by any licensing body, may be required to attend a Test Examination by the School authorities to decide upon his fitness, and all Students referred for three months' study in Anatomy or Physiology by such Examining Boards

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are required to take out the Revisal Classes in these subjects.

9. Each Student at the time of registration signs the following form of obligation :—

"I, the undersigned, being a Student of University College, hereby undertake to comply with all rules and regulations of the College, and to conduct myself on all occasions in a manner befitting the character of a gentleman and a student of the honourable profession of which I propose to become a member."

10. No allowance will be made, nor will the fee paid be returned, for any portion of the curriculum that a Student may forfeit by irregularity of attendance or misconduct; and any wilful violation of the above or other rules which may from time to time be issued by the Medical Faculty, may subject the offender to removal from the School, and to the forfeiture of all fees and privileges as a Student of the School.

11. Before commencing his course of practice at the Dental Hospital, every Student must sign his name as willing to conform to the rules and regulations of the Hospital, and must subscribe to the following agreement :—

To the Dental Committee of the Liverpool Dental Hospital

In consideration of your admitting me as a student to the Liverpool Dental Hospital, I hereby agree and undertake that I will not at any time after leaving the hospital use the name of the Liverpool Dental Hospital or University College in connection with my name, or that of any person or firm with whom I may be at any time connected, in any advertisement or hand-bill, or in any other way ; and I agree to pay you, or any of you, a penalty of Twenty Pounds for every breach of this undertaking, to be recovered by you, or any one of you, by action in any court of law.

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12. Every Student is required to attend the practice of the Hospital during two years consecutively, except with the special permission of the Dean.

13. Each Student must provide himself with the necessary instruments required during his hospital career. Any instruments and appliances belonging to the Hospital, after being used by a Student, must be cleansed, and returned to their proper places.

14. A certificate of having performed to the satisfaction of the Dental Officer 100 fillings during each winter session, and 50 fillings during each summer session of his attendance, will be required from every Student before his Schedule or Certificate can be signed.

15. Every Student will be required to treat at least two regulation cases each winter session, and one regulation case each summer session mechanically during his attendance, and also to complete six dentures and six crowns *(New Regulations*, 1897*)*.

16. A Student shall not receive fee or remuneration from any patient attending the Hospital.

17. A Student must consider himself under the control of the Dental Officers. All unnecessary conversation must be avoided, and quietude and gentlemanly bearing before the patients must be observed. In cases of misbehaviour, it is the duty of the Dental Officer to report such conduct to the Committee.

18. Leave of absence from the Medical School must be obtained from the Dean, and from the Hospital from the Warden, to whom, in case of sickness or other unavoidable cause of non-attendance, written notice must be sent at once.

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COURSE OF STUDY AND TIME TABLE

FIRST YEAR

Winter Session

	MON.	TUES.	WED.	THUR.	FRI.	SAT.
Chemistry	3	3	..	..	3	..
Practical Chemistry	..	..	..	2–5	..	9.30—1
Anatomy, Lectures	10.30	..	11.0	..	10.30	..
„ Practical	9–5	9—5	9—5	9—5	9—5	9—1
„ Tutorial	..	4	..	4	..	..
Dental Hospital Practice	..	..	..	(daily)	..	..
Dental Laboratory	..	..	..	(daily)	..	..
General Hospital Practice	..	..	12.15	(daily)	..	..

Summer Session

	MON.	TUES.	WED.	THUR.	FRI.	SAT.
Histology	11–1.30	2	11—1.30	2	11—1.30	..
Materia Medica	..	9	..	9	..	9
Dental Anatomy and Physiology	..	..	..	..	4	..
Dental Surgery	4	..	..	..	..	..
Dental Mechanics	..	4	..	..	..	..
Dental Metallurgy (Lectures)	..	..	..	3	..	..
Dental Metallurgy (Practical)	..	..	..	4	..	..
Dental Hospital Practice	..	..	..	(daily)	..	..
Dental Laboratory	..	..	..	(daily)	..	..
General Hospital Practice	..	..	12.15	(daily)	..	..

SECOND YEAR

Winter Session

	MON.	TUES.	WED.	THUR.	FRI.	SAT.
Practical Anatomy	..	(daily	9–5)	..	..	9–1
Anatomical Demonstrations	4	..	4	..	4	..
Physiology	11.30	11.30	..	11.30	11.30	..
Medicine	..	9.15	..	9.15	..	9.15
Surgery	9.15	..	9.15	..	9.15	..
Dental Pathology	..	(daily)	..	..	..	..
Dental Hospital Practice	..	(daily)	..	..	..	..
Dental Laboratory	..	(daily)	..	..	..	..
General Hospital Practice	..	(daily)	12.15	..	..	..

Summer Session

	MON.	TUES.	WED.	THUR.	FRI.	SAT.
Dental Anatomy and Physiology	..	..	..	..	4	..
Dental Surgery	4	..	..	..	..	..
Dental Mechanics	..	4	..	..	..	..
Dental Histology	..	..	..	3—5	..	..
Dental Hospital Practice	..	(daily)	..	..	..	..
Dental Laboratory	..	(daily)	..	..	..	..
General Hospital Practice	..	(daily)	12.15	..	..	..

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THE DENTAL CURRICULUM

The Dental Curriculum may be divided into the following sections :—

1. Preliminary Education.
2. Mechanical Dentistry.
3. Professional and Hospital Study.

Before admission to the final examination for a Diploma in Dental Surgery, the candidate must produce evidence of having been engaged in the acquirement of professional knowledge during four years subsequent to the date of Registration as a Dental Student ; any part of the period (three years) required for instruction in Mechanical Dentistry may, however, be taken prior to registration, and in the case of qualified Surgeons, evidence of not less than two instead of three years of such instruction will be sufficient for the L.D.S. England.

Preliminary Examination.—In order to be registered as a Dental Student, one of the preliminary examinations fulfilling the requirements of the General Medical Council must be passed (see Appendix, p. 30). The examination recommended for students in this neighbourhood is the Preliminary Examination of the Victoria University (see Victoria University Calendar, Cornish, Manchester).

Registration as a Dental Student should be effected as soon as a recognised Preliminary Examination has been passed. Forms of Registration may be had on application to the Registrar of the General Medical Council, 299, Oxford Street, London.

Mechanical Dentistry.—The Student devotes three years to instruction in Dental Mechanics under the direction of a qualified Dental Surgeon, or under the direction of the Warden in the Mechanical Laboratory of the Dental Hospital. The third year of this course may run concurrently with the course of Professional study, hence in some cases the first two years are devoted to Dental Mechanics, and the third year is combined with

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the subsequent years of Professional Education. It is wiser, however, to devote the whole period of three years to mechanical work, if the Student has the time at his disposal.

Professional and Hospital Study.—This part of the curriculum extends over at least two years, and comprises :—

1. Special Dental Lectures, and Dental Hospital Practice.
2. Lectures and Practical Classes in the Medical School.
3. General Hospital Practice.

If a Student can spare more than two years to this part of his course he is strongly advised to do so, beginning with parts 2 and 3, and reserving the special Dental curriculum to the last.

Registration as a Medical Student.—At the commencement of this part of his course, the Student registers as a Medical Student ; forms may be had on application to the Dean of the Medical Faculty. Provided that he is registered as a Medical Student at the beginning of his curriculum in the Medical School, all classes and hospital practice attended are recognised by the General Medical Council as part of the general Medical curriculum, should the Student determine to proceed to a Medical and Surgical qualification.

All Students who can see their way to do it are strongly urged to take out the whole of the Medical curriculum, and obtain a Medical and Surgical Diploma before becoming qualified as Dental Surgeons.

*** All enquiries regarding the Dental curriculum should be made to Professor PATERSON, Dean of the Medical Faculty, who will be in attendance at University College on September 28th and following days, for the purpose of enrolling Students and giving further particulars about the curriculum. Particulars relating to the course

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of instruction and apprenticeship at the Dental Hospital, may be had from the Warden, Mr. W. H. Gilmour, at the Hospital.

NOTE.—*Alterations in Curriculum.*—Students preparing for the Diploma of the Royal College of Surgeons of England, who have registered as dental students since January 1st, 1897, have a slightly modified curriculum. Materia Medica is omitted, along with one course each of Dental Anatomy, Surgery, and Mechanics. Practical Classes are added in Dental Mechanics and Dental Surgery (Dental Hospital); and in Practical Dental Metallurgy, and Practical Dental Histology (Medical School).

The examinations for such Students are three :

(1) Chemistry, to be taken, if possible, during the period of apprenticeship.

(2) First Professional Examination in Dental Metallurgy and Dental Mechanics at the end of apprenticeship.

(3) Second Professional Examination in Anatomy, Physiology, Medicine, Surgery, Dental Anatomy, Surgery, and Pathology at the end of professional training.

For the regulations, and details regarding the Examination, see page 36.

FEES

(1) *Medical School.*—A composition fee of £50, payable on registration to the Dean of the Medical Faculty, in one sum, or in two annual instalments of £25, entitles a Student to attend the following classes:—(1) One course of Chemistry (including Practical Chemistry), Anatomy, Physiology, Histology, Materia Medica, Medicine, Surgery, and Dental Metallurgy; (2) Two courses of lectures on Dental Anatomy, Dental Surgery, and Dental Mechanics, and two Winter Sessions of Practical Anatomy. Summer Anatomy, Dental Pathology, and Dental Histology are

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not included in the composition fee. Students paying the composition fee, who omit Chemistry or Materia Medica, are permitted to substitute, for either of these courses, Dental Histology or Dental Pathology without further payment.

Students preparing for a Medical Diploma and a Dental Diploma at the same time are advised to pay the Medical Composition Fee (£70), and to pay separately for the Special Dental Classes.

The composition fee for Students registered since January 1st, 1897, is also £50. It includes the above classes, with the exception of Materia Medica, which is omitted. It also includes one course each of Practical Dental Metallurgy, Practical Dental Histology, and Practical Dental Pathology. A course of Special Lectures on the Surgery of the mouth is included in the course of systematic Surgery.

(2) *Dental Hospital Practice.*—The fee for six months is £7 7s.; for two years' Dental Hospital Practice, £21; apprenticeship (three years) £105; payable to the Dean of the Medical Faculty. The fee for the class of Practical Dental Mechanics (£5 5s.), held at the hospital, is included in the composition fee. All fees are payable in advance.

(3) *Hospital Practice, Royal Infirmary.*—The fee for two years' Hospital Practice, at the Royal Infirmary, is £10 10s., payable to Dr. Barr, 72, Rodney Street.

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SYNOPSIS OF LECTURES

Students preparing for the Diploma of the English College of Surgeons are reminded that no Certificates can be accepted unless they testify that the Student has attended 75 per cent. of the meetings of the class, and has been present at the class examinations.

I.—MEDICAL AND DENTAL CLASSES

ANATOMY

Professor A. M. PATERSON, M.D.

Senior Demonstrator and Assistant Lecturer:
T. R. W. ARMOUR, M.B.

Demonstrators: D. DOUGLAS-CRAWFORD, F.R.C.S.; E. T. STOCKDALE, M.R.C.S., L.R.C.P.

Robert Gee Fellow: G. C. WALKER, M.B., D.P.H. (1899).

WINTER SESSION

I. Descriptive Anatomy

Mondays and Fridays at 10.30 a.m., Wednesdays at 11 a.m.

In this course a systematic account is given of the development and structure of the tissues and organs comprising the Human Body. The lectures are fully illustrated by drawings, preparations, and recent dissections; and demonstrations are given from time to time of the naked eye and microscopical structures described.

Books.—Morris's *Anatomy*; Gray's *Anatomy*; Quain's *Anatomy*.

Each Student is strongly advised to provide himself also with a disarticulated skeleton, and a disarticulated skull.

Fee.—£5 5s.

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II. Practical Anatomy

The Dissecting Room is open from 9 a.m. to 5 p.m. daily, except Saturday, when it closes at 1 p.m. The Practical Course is under the immediate supervision of the Professor, assisted by the Demonstrators. Special demonstrations are given from time to time in the Dissecting Room. In the Dissecting Room and Anatomical Museum adjoining it, numerous plates, dissections, frozen sections, and specimens of human and comparative Anatomy, including an excellent collection illustrative of human and comparative Dental Anatomy, are provided for the use of Students. A number of books of reference, and a valuable series of Anatomical plates, are kept in the department, and are accessible to Students.

Books.—Cunningham's *Practical Anatomy*; Ellis's *Demonstrations*.

Fee.—£3 3s.; for 3 months, £2 2s.

III. Tutorial Class

Tuesday and Thursday at 4 p.m.

This class is held in connection with the systematic course, for the purpose of more detailed examination of the bones and joints.

This class is compulsory for all Junior Students.

IV. Anatomical Demonstrations

Monday, Wednesday, and Friday, at 4 p.m.

This class is open without further payment to Senior Dental Students.

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SUMMER SESSION

I. Practical Anatomy

AS IN WINTER

Fee.- £2 2s.

II. Tutorial Classes

1. *A tutorial class for Junior Students*, for instruction in Osteology, is held at hours to be arranged.

2. *A tutorial class for Senior Students* is held as in Winter, at hours to be arranged.

These classes are open to all members of the practical class.

III. Lectures and Demonstrations

Monday, Wednesday, and Friday, at 10 a.m.

Courses of lectures and demonstrations in special departments of Anatomy are given during the Summer Session. The Subjects to be taken up in the Session of 1900 will be subsequently announced.

Fee. -£2 2s.

PHYSIOLOGY

Professor C. S. SHERRINGTON, M.A., M.D., F.R.S.

Assistant Lecturer in Chemical Physiology :
A. S. GRÜNBAUM, M.D., M.R.C.P.

Assistant Lecturer and Senior Demonstrator :
J. S. MACDONALD, M.A., M.R.C.S.

Demonstrator of Dental Histology : J. A. WOODS, L.D.S.

Holt Tutorial Scholar : R. J. EWART, M.B., B.Sc. (1899).

WINTER SESSION. *Lectures.*—A systematic course of lectures on PHYSIOLOGY is given from October to March, on Monday, Tuesday, Thursday, and Friday, at 11.30.

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This course may be taken in the first year, provided that the necessary Preliminary Science courses have been already taken.

Fee.—£5 5s.

SUMMER SESSION. *Lectures.*—A course of lectures on HISTOLOGY will be given from May to July, on Tuesday and Thursday, at 2 p.m. This course is in connection with that of Practical Histology, and should be attended by all Students in their first Summer Session. It is followed by a Microscopic Demonstration.

PRACTICAL HISTOLOGY.—A systematic course of Practical Histology will be held on Monday, Wednesday, and Friday, 11 to 1.30. Each member of this class must provide, for his own use, miscroscope slides, cover glasses, drawing book, section lifter, mounted needles, watch glasses, glass syringe, razor, fine forceps, scalpel, and dusting cloth. Before entering the class, each Student is strongly advised to provide himself with a reliable microscope.

These courses are taken in the first summer.

Fee.—£5 5s. Lectures alone, £2 2s.

CHEMISTRY AND PRACTICAL CHEMISTRY

Professor J. CAMPBELL BROWN, D.Sc. Lond., F.C.S., F.I.C.

Lecturer on Metallurgy: T. L. BAILEY, Ph.D.

Demonstrators and Assistant Lecturers: W. B. DAVIDSON, M.A., Ph.D.; A. W. TITHERLEY, M.Sc., Ph.D.

I. Lectures

Students attend the Elementary Course at 3 p.m. on Monday, Tuesday, and Friday, during the Autumn Term, and a Special Course on Monday, Wednesday, and Friday, at 9.30, in the Lent Term.

Fee.—£3.

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II. Practical Chemistry

This Class meets on Thursday, 2 to 5 p.m., or Saturday, 9.30 to 1 p.m., during the Winter Session, or twice weekly during the Summer Term.

Fee.—£4 4s.

The composition fee is £5 5s. A charge of 12s. 6d. is made for materials and the use of apparatus, etc., and Students will not be required to supply their own apparatus.

MATERIA MEDICA

Professor WILLIAM CARTER, M.D., B.Sc., LL.B., F.R.C.P., *Physician to the Royal Southern Hospital*

Demonstrator: P. H. MARSDEN, F.C.S.

This course is given during the Summer Term on Tuesday, Thursday, and Saturday, at 9 a.m.

Fee.—£2 2s.

The Materia Medica Museum, placed in the Medical School, has been re-organised, and is accessible to Students during ordinary College hours.

A Tutorial Class is held by Mr. Marsden, in the Museum, on Fridays, at 9 a.m.

DENTAL ANATOMY AND PHYSIOLOGY

F. T. PAUL, F.R.C.S., *Consulting Surgeon to the Dental Hospital*

Demonstrator: J. A. WOODS, L.D.S. Eng.

Summer Session.—Friday, at 4 p.m.

This course includes a description of the anatomical characters of the Human Teeth. The minute structure of the dental tissues in man and animals, including bone, periosteum, gum, etc. The development of teeth in vertebrata, together with a general consideration of their anatomical position and relation to other structures. The

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development of the jaws, eruption of the temporary and permanent teeth, and the various modes of attachment of teeth.

The dentition of vertebrate animals.

The course will consist of twelve or more lectures, which will be illustrated by lantern slides, microscopical specimens, and a large collection of skulls contained in the Museum.

Fee.—£3 3s.

PRACTICAL DENTAL HISTOLOGY

Professor SHERRINGTON and Mr. WOODS

A Practical Class in Dental Histology will be held in the Summer Session, on Thursdays, at 3 o'clock, in the Histological Laboratory. It will be conducted by the Demonstrator, under the supervision of the Professor. Students will be taught the various methods, wet and dry, by which teeth are prepared for microscopical examination, and will be provided with the necessary material to enable them to make a set of slides illustrative or the subject.

Specimens and re-agents will be supplied in the Laboratory, but Members of the Class must bring their own microscope, slides, and covers, and a hone for grinding down hard sections.

Fee.—£2 2s.

DENTAL SURGERY

E. J. M. PHILLIPS, L.D.S., M.R.C.S., L.R.C.P.,

Dental Surgeon, Royal Infirmary

Summer Session.—Monday, at 4 p.m.

This Course consists of twenty or more lectures, divided for the convenience of students into two summer sessions. It is intended to cover the whole subject of Dental Surgery, with reference also to certain conditions of the oral cavity likely to come under the notice of Practitioners of Dental Surgery.

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Models, preparations, specimens, and drawings will be shown to illustrate the course.

Fee.—£3 3s.

DENTAL MECHANICS

E. A. Councell, L.D.S. Eng.

Summer Session.—Tuesday, at 4 p.m.

This course of Lectures will embrace the different methods of inserting artificial teeth. The treatment of the mouth preparatory to the insertion of artificial teeth. Malerials for obtaining impressions of the mouth. Making gold plates, wire, solder, etc. Swaging of plates. Mechanical appliances for the regulation of irregularities of the teeth. Principles and appliances for soldering. Metallic dies and counter dies. Articulating plates and models. Materials used in the manufacture of porcelain teeth. Application of vulcanized india-rubber and celluloid for dental purposes. Crowns: all gold, gold and porcelain, continuous gum, various splints, etc.

Fee.—£3 3s.

DENTAL METALLURGY

T. Lewis Bailey, Ph.D., F.I.C.

Summer Session.—Thursday, at 3 p.m.

The lectures, which will be fully illustrated by lantern slides, diagrams, models, and experiments, will include a study of the metals, alloys, and metallic compounds used in Dentistry.

The chief processes of metal extraction will be described, together with the modes of producing alloys; special attention will be devoted, however, to the physical and chemical properties of the different metals and alloys, with a view to showing their special fitness for various classes of work.

Books.—E. A. Smith's *Dental Metallurgy*; Rhead's *Metallurgy*.

Fee.—£3 3s.

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PRACTICAL DENTAL METALLURGY

Thursday, at 4 p.m.

Exercises in laboratory smelting work, the reduction of metallic compounds, and the production of alloys.

Estimation of lead, silver, and gold, in natural products and alloys.

Fee.—£3 3s.

The Laboratory will supply ordinary reagents, but students will themselves provide pots and bullion samples, the cost of which will amount to a few shillings.

DENTAL PATHOLOGY

Professor RUBERT W. BOYCE, M.B.

Assistant Lecturer and Demonstrator: J. H. ABRAM, M.D., M.R.C.P., *Assistant Physician to the Royal Infirmary*

A practical course on this subject is held during the Winter Session. The course includes the necessary microscopic technique and the study of the degenerations, new growths, and mycotic affections of the teeth and jaws.

Fee.—£3 3s.

PRINCIPLES AND PRACTICE OF MEDICINE

Professor T. R. GLYNN, M.D., F.R.C.P., *Physician to the Royal Infirmary*

WINTER SESSION.—Tuesday, Thursday and Saturday, 9.15 a.m.

Fee.—£5 5s.

SURGERY

Professor RUSHTON PARKER, M.B., B.S., F.R.C.S., *Surgeon to the Royal Infirmary*

Demonstrator and Assistant Lecturer: W. THELWALL THOMAS, F.R.C.S., *Assistant Surgeon to the Royal Infirmary*

LECTURES.—Monday, Wednesday, and Friday, at 9.15 a.m. A systematic course, embracing the Principles

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of Surgery and Surgical Pathology, illustrated with diagrams, original drawings, and photographs. A series of special lectures on the Surgery of the mouth is included in the course, comprising congenital deformities; accidents in tooth-drawing; fractures of the jaws; diseases of the gums, jaws, lips, tongue, and mouth generally.

Operations on the dead body are performed by the Practical Class under the direction of the Professor.

Fee.—£5 5s.

II.—DENTAL HOSPITAL PRACTICE

Days of Attendance of Dental Surgeons

Monday - -	Mr. OSBORN, Mr. WOODS
Tuesday - -	Mr. TINDAL, Mr. MOUNTFORD
Wednesday - -	Mr. LLOYD, Mr. GILMOUR
Thursday - -	Mr. TOMLINSON, Mr. J. SKAE
Friday - - -	Mr. DRAKE, Mr. EDWARDS
Saturday - - -	Mr. ROBERTS

The Hospital is open for the admission of patients from 9 to 11.30 a.m., and from 6.30 to 8 p.m. (except Saturday). The staff consists of twelve Honorary Dental Surgeons, one of whom is in attendance both morning and evening to give advice and clinical instruction. During the Session special demonstrations are given by members of the Staff. The House Surgeons are in constant attendance to superintend the work of the Hospital, and assist Students with their practical work. In order to facilitate the work of Students, the House Surgeons are in attendance in the Conservation Room until 1 p.m. daily, and no conservative work is done in the evenings, the Hospital being open for extractions only.

All new Students undergo a thorough practical course at the hands of the Demonstrator before being permitted to attend patients.

Two Assistant House Surgeons and Dressers are appointed from among the Senior Students.

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A new Mechanical Laboratory has been constructed, and placed in charge of a skilled mechanic under the direction of the Warden. An opportunity will thus be afforded for making Dentures, and fitting them in the mouth, as well as providing a thorough course of Practical Dental Mechanics. The Laboratory is open daily from 9 to 5; Saturday, 9 to 1.

The Committee is prepared to take a limited number of pupils for the three years' course of Mechanical Dentistry.

FEES

The fee for the two years' Dental Hospital Practice required by the College of Surgeons is £21, which must be paid on entrance. Fee for six months' Hospital Practice, or any part of that period, £7 7s. Practical Dental Mechanics (six months) £5 5s., included in the Composition Fee.

III.—GENERAL HOSPITAL PRACTICE

ROYAL INFIRMARY

Lecturers in Clinical Surgery: Sir W. M. Banks, M.D., F.R.C.S.; Rushton Parker, M.B., B.S., F.R.C.S.; F. T. Paul, F.R.C.S.

Students are required to attend the practice of a General Hospital for two winter sessions. The Lectures on Clinical Surgery are given by the Lecturers at 12.15, on Wednesdays.

Composition Fee.—£10 10s. Payable to Dr. Barr, 72, Rodney Street.

SCHOLARSHIPS AND PRIZES

(1.) Fletcher Scholarship.—Mr. Fletcher, of Warrington, has established an Entrance Scholarship of about £20 for one year. The Scholarship is open to students beginning their Dental Hospital course, and is awarded on the results of an examination (written and practical) in Mechanical Dentistry; the examination is held in October.

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(2.) THE QUINBY PRIZES for Operative Dental Surgery, open to all Students who enter for the two years' study required by the curriculum. Senior prizes (1) £8, (2) £6 ; Junior prizes (1) £4, (2) £2.

(3.) ASH'S PRIZE of Two Guineas for the best paper on some subject in Dental Surgery.

(4.) MEDICAL FACULTY MEDALS AND CERTIFICATES—Torr Medal in Anatomy. Holt Medal : and Fletcher Book Prize, given by Dr. Gornall (£3 3s.), in Physiology. Bronze Medals for Elementary Anatomy and Histology. Book Prizes for Practical Anatomy. Silver Medal and Certificates for Dental Anatomy and Physiology.

(5.) SCHOLARSHIP IN DENTAL SURGERY—A Scholarship (value £10 10s.), guaranteed by Mr. E. J. M. Phillips for five years, will be offered for competition among Senior Dental students at the end of the Summer Session, on the results of a Special Examination in Surgery and Dental Surgery. Names of competitors must be in the Dean's hands by June 15th.

(6.) PRIZE IN DENTAL MECHANICS.—A Book Prize (value £5 5s. 0d.) has been established in this subject by Mr. Councell.

PRIZE WINNERS

OPERATIVE DENTAL SURGERY.—1890, 1st, W. H. Gilmour ; 2nd, L. J. Osborn. 1891, 1st, J. A. Woods ; 2nd, T. W. Byrne. 1893, 1st, T. W. Byrne ; 2nd, J. L. Shields. 1894, 1st, A. H. Quinby, J. L. Shields (bracketed). 1895, 1st, A. P. Nixon ; 2nd, J. J. James. 1896, 1st, J. W. Skae ; 2nd, J. W. Alder. 1897, 1st, A. Drake ; 2nd, A. M. Partridge. 1898, *Senior*, F. J. Blight ; *Junior*, H. W. P. Bennette. 1899, *Senior*, H. W. P. Bennette ; *Junior*, C. K. Dinn.

ASH'S PRIZE.—1891, 1st, J. E. Edwards. 1893, 1st, J. A. Woods. 1894, 1st, A. P. Nixon. 1895, 1st, E. W. A. Jeffery. 1896, H. W. Kaiser. 1897, A. Drake. 1898, D. Moores. 1899, F. Lamb.

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SPECIAL DENTAL MEDAL

1895	...	...	A. P. NIXON
1896	...	...	(not awarded)
1897	...	...	A. DRAKE, E. BEVINGTON } *Certificates*
1898	...	...	B. WOOD
1899	...	...	H. W. P. BENNETTE

STUDENTS' SOCIETY, LIVERPOOL DENTAL HOSPITAL, 1900

President

J. P. ROBERTS, L.D.S.Eng.

Vice-President

LEWIS OSBORNE, L.D.S.Eng.

Treasurer

T. H. BARLOW

Secretary

T. W. WIDDOWSON

Assist. Sec. : C. K. DINN

Curator

F. LAMB

Librarian

T. H. P. KOLESAR

Council

F. J. BLIGHT. H. W. P. BENNETTE. W. R. DINN.

The Society meets at the Dental Hospital. A Prize (value £2 2s.) is offered for debating during the Session. The Society possesses a complete Reference Library of Dental Works.

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APPENDIX

PRELIMINARY EXAMINATION IN GENERAL EDUCATION

Regulations of the General Medical Council

Regulations in Operation from January 1st, 1892

The Preliminary Examination in General Education, required to be passed previous to Registration as a Medical or Dental Student, is as follows :—

(*a*) ENGLISH LANGUAGE, including Grammar and Composition.

(*b*) LATIN, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors.

(*c*) MATHEMATICS, comprising :—(*i.*) Arithmetic ; (*ii.*) Algebra, as far as Simple Equations, inclusive ; (*iii.*) Geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions.

(*d*) One of the following optional subjects :—

(1) Greek, (2) French, (3) German, (4) Italian, (5) any other Modern Language.

The Council will not in future, except in the cases indicated below, accept any Certificate of Preliminary Examination in General Education, unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been passed at the same time.

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List of Examining Bodies whose Examinations in General Education will be recognized by the Medical Council as Qualifying for Registration as Medical or Dental Student.

I.—UNIVERSITIES IN THE UNITED KINGDOM

University of Oxford

(1) Junior Local Examinations (Certificate to include all the required subjects at one time). (2) Senior Local Examinations (Certificates to include the required subjects). (3) Responsions (Certificate to be supplemented by others showing that the required mathematical subjects have been passed in). (4) Moderations (Certificates to include the required subjects). (5) Final Examination for a Degree in Arts.

University of Cambridge

(6) Junior Local Examinations (Certificate to include all the required subjects at one time). (7) Senior Local Examinations (Certificates to include the required subjects). (8) Higher Local Examinations (Certificates to include the required subjects). (9) Previous Examination (Certificates to include the required subjects). (10) General Examination (Certificates to include the required subjects). (11) Final Examination for a Degree in Arts.

University of Durham

(12) Examination for Certificate of Proficiency (Certificate to include all the required subjects at one time). (13) Preliminary Examination in Arts for Graduation in Medicine and Science (Certificate to include the required subjects). (14) Final Examination for a Degree in Arts.

University of London

(15) Matriculation Examination (Certificate to include the required subject). (16) Final Examination for a Degree in Arts or Science.

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Victoria University

(17) Preliminary Examination (Certificate to include all the required subjects at one time). (18) Entrance Examination in Arts (Certificate to include all the required subjects at one time). (19) Final Examination for a Degree in Arts or Science.

University of Wales

(20) Matriculation Examination (Certificate to include all the required subjects at one time). (21) Final Examination for a Degree in Arts or Science.

University of Edinburgh

(22) Junior Local Examination (Certificate to include all the required subjects at one time). (23) Senior Local Examination (Certificates to include the required subjects). (24) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (25) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (26) Final Examination for a Degree in Arts or Science.

University of Aberdeen

(27) Junior Local Examination (Certificate to include all the required subjects at one time). (28) Senior Local Examination (Certificates to include the required subjects). (29) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (30) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (31) Final Examination for a Degree in Arts or Science.

University of Glasgow

(32) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (33) Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (34) Final Examination for a Degree in Arts or Science.

University of St. Andrews

(35) Preliminary Examination for Graduation in Medicine and Surgery (Certificate to include the required subjects). (36)

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Preliminary Examination for Graduation in Arts or Science (Certificate to include the required subjects). (37) Final Examination for a Degree in Arts or Science. (38) Final Examination for the Diploma of L.L.A.

University of Dublin

(39) Public Entrance Examination (Certificate to include the required subjects). (40) Examination for the First, Second, Third, or Fourth Year in Arts (Certificate to be signed in the approved form by the Medical Registrar of the University). (41) Final Examination for a Degree in Arts.

Royal University of Ireland

(42) Matriculation Examination (Certificate to include the required subjects). (43) Final Examination for a Degree in Arts or Science.

Oxford and Cambridge Schools' Examination Board

(44) Lower Certificate (to include all the required subjects at one time). (45) Higher Certificate (Certificates to include the required subjects).

II.—GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM

Scotch Education Department

(46) Examination for Lower Grade leaving Certificate (to include all the subjects at one time).

(47) Examination for Higher Grade or Honours leaving Certificate (to include the required subjects).

Intermediate Education Board of Ireland

(48) Junior or Middle Grade Examination (Certificate to include all the required subjects at one time).

(49) Senior Grade Examination (Certificate to include the required subjects).

Central Welsh Board

(50) Senior Certificate Examination.

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III.—EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM

College of Preceptors

(51) Examination for First Class Certificate (to include all the required subjects at one time).

Educational Institute of Scotland

(52) Preliminary Medical Examination (Certificate to include all the required subjects at one time).

Royal Colleges of Physicians and Surgeons in Ireland.

(53) Preliminary Examination (Certificate to include all the required subjects at one time).

EXAMINATIONS HELD OUT OF THE UNITED KINGDOM

(54) **University of Malta.**—Matriculation Examination.

(55) **University of Calcutta.**—First Examination in Arts.

(56) **University of Madras.**—First Examination in Arts.

(57) **University of Bombay.**—Matriculation Examination.

(58) **Ceylon Medical College.**—Preliminary Examination.

(59) **Panjab University.**—Entrance Examination.

(60) **University of Allahabad.**—Intermediate Examination in Arts.

(61) **University of McGill College, Montreal.**—Matriculation Examination.

(62) **College of Physicians and Surgeons of the Province of Quebec.**—Matriculation Examination.

(63) **University of Bishop's College, Montreal.**—Matriculation Examination.

(64) **Universities and Colleges of the Province of Ontario.**—Departmental Arts Matriculation Examination. (Conducted under the direction of the Provincial Education Department).

(65) **University of Manitoba.**—Preliminary and Previous Examinations.

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(66) **University of New Brunswick, Fredericton.**—Matriculation Examination.

(67) **University of Mount Alison College, New Brunswick.**—Matriculation Examination.

(68) **College of Physicians and Surgeons of New Brunswick.**—Matriculation Examination.

(69) **Dalhousie College and University, Halifax, Nova Scotia.**—Matriculation Examination.

(70) **Provincial Medical Board of Nova Scotia.**—Preliminary Examination.

(71) **Newfoundland Medical Board.**—Preliminary or Matriculation Examination.

(72) **University of Melbourne.**—Matriculation Examination.

(73) **University of Sydney.**—Matriculation Examination. (74) First Year Examination in Arts. (75) Senior Public Examination. (76) Entrance Examination for Medicine and Science.

(77) **University of Adelaide.**—Senior Public Examination. (78) First Year Examination in Arts.

(79) **University of Tasmania.**—Senior Public Examination.

(80) **University of the Cape of Good Hope.**—Matriculation Examination.

(81) **University of Otago.**—Preliminary Examination for Medical Students.

(82) **University of New Zealand.**—Preliminary Examination for Medical Students.

(83) **Codrington College, Barbados.**—Examinations qualifying for a Degree in Arts at the University of Durham.

(84) **Foreign Universities in Europe.**—The German Abiturienten-Examen of the Gymnasia and Real-gymnasia ; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe.

(85) **Egyptian Government.**—Secondary Education Certificate.

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ROYAL COLLEGE OF SURGEONS OF ENGLAND

REGULATIONS RELATING TO THE DIPLOMA IN DENTAL SURGERY

(For Students registered since January 1st, 1897.)

Section I

EDUCATION

Candidates who register as Dental Students after the 1st January, 1897, are required to pass three Examinations—the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination—and to produce the following Certificates before admission to the several Examinations :—

Preliminary Science Examination

1. Of having received instruction, at an Institution recognized for the purpose, in Chemistry, Physics, and Practical Chemistry.

This instruction may be taken at a recognized Institution, prior to the Date of Registration as a Dental Student.

A list of the Institutions recognized for instruction in Chemistry and Physics may be had on application to the College of Surgeons.

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First Professional Examination

2. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner, or under the direction of the Superintendent of the Mechanical Department of a recognized Dental Hospital, where the arrangements for teaching Mechanical Dentistry are satisfactory to the Board of Examiners in Dental Surgery. In the case of qualified Surgeons, evidence of a period of not less than two instead of three years of such instruction will be sufficient.

This instruction may be taken prior to the Date of Registration as a Dental Student.

3. Of registration as a Dental Student by the General Medical Council, 299 Oxford Street, London, W.

4. Of having attended at a recognized Dental Hospital and School:

   (*a*) A course of Lectures on Dental Metallurgy.
   (*b*) A course of Practical Dental Metallurgy.
   (*c*) A course of Lectures on Dental Mechanics.
   (*d*) A course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns.

Second Professional Examination

5. Of having been engaged during four years in the acquirement of professional knowledge, subsequently to the date of registration as a Dental Student.

6. Of having attended at a recognized Dental Hospital and School:—

   (*a*) A course of Dental Anatomy and Physiology.
   (*b*) A separate course of Dental Histology, including the preparation of Microscopical Sections.

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(*c*) A course of Dental Surgery.
(*d*) A separate course of Practical Dental Surgery.
(*e*) A course of not less than five Lectures on the Surgery of the Mouth.*

* These Lectures may be given either at a recognized Dental Hospital and School, in which case the Lecturer must be a qualified Surgeon practising Surgery, or they may be given at a recognized Medical School, and may form part of the course required by Clause 8 (*d*).

7. Of having attended at a recognized Dental Hospital or in the Dental Department of a recognized general Hospital, the Practice of Dental Surgery during two years.

8. Of having attended at a recognized Medical School:—

(*a*) A course of Lectures on Anatomy.
(*b*) A course of Lectures on Physiology.
(*c*) A separate Practical Course of Physiology.
(*d*) A course of Lectures on Surgery.
(*e*) A course of Lectures on Medicine.

9. Of having performed Dissections at a recognized Medical School during not less than 12 months.

10. Of having attended, at a recognized Hospital or Hospitals, the Practice of Surgery and Clinical Lectures on Surgery during two Winter Sessions.

11. Of being 21 years of age.

The Certificates of professional study will be required to show that Students have attended the courses of professional study to the satisfaction of their Teachers.

NOTE.—*Professional study prior to the date of registration as a Dental Student is not recognized except in the case of Chemistry, Physics, and Practical Chemistry, and of instruction in the details of Mechanical Dentistry (see Clauses 1 and 2), and will not be counted under any circumstances in lieu of part of the four years' study subsequent to the date of registration as a Dental Student, required by Clause* 5.

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Section II

EXAMINATION

1. The Preliminary Science Examination consists of Chemistry, Physics, and Practical Chemistry, and will be identical with Part I. of the First Examination of the Examining Board in England. Candidates may present themselves for this Examination before entering at a Dental School on production of the Certificates required by Section I., Clause 1.

A Candidate who shall produce satisfactory evidence of having passed an Examination for a Degree in Medicine, conducted at a University in the United Kingdom, in India, or in a British Colony, on the subjects of the Preliminary Science Examination, will be exempt from that Examination.

A Candidate referred in this Examination will be required, before being admitted to re-examination, to produce a Certificate that he has received further instruction in the subjects, to the satisfaction of his Teacher, at an Institution recognized for the purpose by the Examining Board, for a period of not less than three months subsequent to the date of his reference.

2. The First Professional Examination consists of Mechanical Dentistry and Dental Metallurgy. Candidates may present themselves for the First Professional Examination for the Licence after the completion of six months' attendance at a recognized Dental Hospital and School, on production of the certificates required under Section I., Clauses 2, 3, and 4.

A Candidate referred in either or both of the subjects of the First Professional Examination will be required, before being admitted to re-examination, to produce a Certificate, in regard to Mechanical Dentistry, of having received six months' further instruction under the conditions specified in Section I., Clause 2 ; and, in regard to Dental Metallurgy, a Certificate of having received, subsequent to the date of his reference, not less than three months' instruction in that subject, to the satisfaction of his Teacher, in a recognized Dental School.

3. The Second Professional Examination consists of General Anatomy and Physiology, General Surgery and

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Pathology, Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery.

The examination is partly written, partly practical, and partly oral.

The Written Examination comprises General Anatomy and Physiology, General Pathology and Surgery, Dental Anatomy and Physiology, and Dental Pathology and Surgery.

At the Practical Examination, Candidates may be examined—

(*a*) On the treatment of Dental Caries, and may be required to prepare and fill cavities with Gold or Plastic filling or material, or to do any other operation in Dental Surgery.
(Candidates must provide their own instruments.)

(*b*) On the Mechanical and Surgical treatment of the various irregularities of Children's teeth.

The Oral Examination comprises the several subjects above mentioned, and is conducted by the use of preparations, casts, drawings, etc.

Candidates may present themselves for the Second Professional Examination on production of the Certificates required under Section I., Clauses 5 to 11, after the completion of four years' professional study from the date of registration as a Dental Student and after the lapse of not less than six months from the date of passing the First Professional Examination.

A Candidate referred at the Second Professional Examination will be required to produce, before admission to re-examination, a Certificate of three months' additional study at a General Hospital and a Special Dental Hospital, the precise attendances required at each Hospital being left to the discretion of the respective Hospital Authorities.

Candidates who have passed the Second Examination of the Examining Board in England, or who shall produce evidence of having passed the Examination in Anatomy and Physiology required for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of

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Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Anatomy and Physiology required for a degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in those subjects.

Candidates, who are Members of the College, or who have passed the Examination in Surgery of the Examining Board in England, or who shall produce evidence of having passed the Examination in Surgery for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Surgery for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in General Surgery and Pathology.

4. The fee for the Diploma of the Licence in Dental Surgery is Twenty Guineas, and is payable in the following manner, viz. :—

			£	s.	d.
Preliminary Science Examination.		Each admission	3	3	0
First Professional	do.	do. ...	2	2	0
Second do.	do.	do. ...	5	5	0

The balance, if any, of the total fee of Twenty Guineas to be paid on the completion of the several examinations, before the Licence is granted.

5. The Preliminary Science Examination will be held in January, March or April, July and October in each year.

The First and Second Professional Examinations will be held in May and November in each year.

Candidates are required to give twenty-one clear days' notice of their intention to present themselves for examination.

NOTE.—*A ticket of admission to the Museum, to the Library, and to the College Lectures, will be presented to each Candidate on his obtaining the Diploma.*

N.B.—*All applications with reference to the Examination for the Diploma in Dental Surgery should be addressed to Mr. F. G. Hallett, Secretary of the Examining Board in England, Examination Hall, Victoria Embankment, London, E.C.*

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Synopsis indicating the range of the Examinations may be had on application to the Secretary.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

The Regulations for the Dental Examinations differ in some respects from the above, and may be had on application to the Secretary.

FINAL REGISTRATION

Having obtained his Diploma, the Student must place his name upon the Dental Register before either engaging in practice for himself or taking a position as an assistant.

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DIPLOMAS

IN

PUBLIC HEALTH

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VICTORIA UNIVERSITY

UNIVERSITY COLLEGE LIVERPOOL

MEDICAL FACULTY

DIPLOMAS

IN

PUBLIC HEALTH

PROSPECTUS OF CLASSES

SESSION 1900-1901

AT THE UNIVERSITY PRESS OF LIVERPOOL 1900

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THE MEDICAL FACULTY

Department of Public Health

Principal:

PROFESSOR A. W. W. DALE, M.A.

Chairman:

PROFESSOR HERDMAN, F.R.S.

Professors and Lecturers:

Hygiene - - -	Prof.	E. W. HOPE, M.D., D.Sc.
Chemistry - -	„	J. CAMPBELL BROWN, D.Sc., F.C.S., F.I.C.
Pathology & Bacteriology	„	RUBERT W. BOYCE, M.B.
Infectious Diseases -		N. E. ROBERTS, M.B., D.P.H.

Assistant Lecturers and Demonstrators:

Pathology & Bacteriology -	J. HILL ABRAM, M.D., M.R.C.P. HUGH R. JONES, M.D., B.Sc., D.P.H. W. B. WARRINGTON, M.D., M.R.C.P.
Public Health - - -	(Vacant)
Chemistry - - - -	T. L BAILEY, Ph.D. C. A. KOHN, B.Sc., Ph.D. A. W. TITHERLEY, M.Sc., Ph.D.

Dean of the Faculty:

PROFESSOR PATERSON, M.D.

The Dean will be in his room, opposite the College Office, on Friday, September 28th, and following days, to register students and give general information about the curriculum.

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THE MEDICAL SCHOOL

The Liverpool Medical School was formally established in 1834, although before that date organised clinical instruction was given at the Royal Infirmary. On the foundation of University College, the Royal Infirmary School of Medicine was incorporated with it, and both became an integral part of the Victoria University in 1884.

The Medical School forms part of the group of buildings composing University College. It is most conveniently situated in the centre of the City, in a large square of ground bounded by Brownlow Hill, Brownlow Street, Pembroke Place, and Ashton Street. In this space the Medical School occupies a central position between the new Royal Infirmary and the recently erected College buildings. The Lying-in Hospital occupies the south-west corner of the area; the Dental Hospital is within five minutes' walk; and within a quarter of a mile are the Eye and Ear Infirmary and the Children's Hospital, the practice of all of which is free to students.

A Medical Map of Liverpool is appended to the Syllabus, showing the relative positions of the College and Hospitals.

NEW BUILDINGS

The buildings comprising the Medical School, which, with various additions and alterations, have existed since its foundation, are at present being gradually replaced by new and modern laboratories.

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SCHOOL OF HYGIENE

The building known as Ashton Hall, which previously accommodated the Pathological Department, is now devoted entirely to the study of hygiene. It includes a large lecture hall, laboratories and work rooms, and a museum of hygiene. The classes held in the building are :—lectures in hygiene for medical students, lectures for the Diploma in Public Health, and classes for the Sanitary Inspection certificates of the Victoria University and the Sanitary Institute of Great Britain.

This department is under the immediate direction of Dr. HOPE, the Professor of Hygiene, and his assistant. It is administered by a Board composed of members of the Senate and Council of University College, and members of the City Council.

Dr. HUGH R. JONES has been appointed Tutor in Public Health, and under the direction of the Professors of Hygiene, Pathology and Chemistry, gives systematic instruction to D.P.H. candidates.

With the exception of practical chemistry and outdoor sanitary work, all instruction is given in the School of Hygiene itself. Students thereby avoid the inconvenience and delay of going to different departments for each branch of instruction.

In the CHEMICAL LABORATORIES, built in 1886, and enlarged in 1896, a special room is devoted to the teaching of sanitary chemistry, and other rooms are devoted to water analyses, gas analyses, and micro-chemistry.

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GENERAL REGULATIONS

Students are enrolled by Professor PATERSON, the Dean of the Medical Faculty, at the Dean's Office, University College, between the hours of 10 a.m. and 1 p.m. during the first week of each session. No student can become a member of any class until his fees are paid.

Every student on entering is required to sign an obligation of conformity to the rules and regulations of the College. The Medical Faculty will not be responsible for the return of fees forfeited by the irregularity or misconduct of a student.

The Winter Session comprises the Autumn Term, which commences on the 1st of October and ends before Christmas, and the Lent Term, which commences on the 7th of January, and terminates at the end of March. The Summer Session commences on the 1st of May, and terminates at the end of July. D.P.H. students are permitted to begin their course at any time, but are advised to do so, if possible, in October, January, or May.

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PUBLIC HEALTH COURSES

Qualifying for Diplomas in Sanitary Science

Every facility is now afforded for training in sanitary science and state medicine. The City of Liverpool and its Port afford exceptional advantages for the study of Public Health. Under the Medical Officer of Health, there are some 95 Inspectors employed in the sanitary administration of the city, including the regulation of the food supply, the supervision of factories, workshops, and lodging houses, the control and limitation of infectious diseases, port sanitation, etc. In addition, the City Fever Hospitals are always supplied with zymotic disease in every phase. There are now special bacteriological laboratories devoted to the practical study of the diseases of man and animals, and to the investigation of the purity of air, water, foods, etc. The chemical department of the College, further, is admirably equipped for training in water and food analyses. The Public Health classes are conducted in the School of Hygiene, which contains, besides lecture hall and laboratories, a well equipped Museum of Hygiene.

The *curriculum* for the various D.P.H. examinations demands (1) a six months' course of practical instruction in sanitary science, (2) a six months' course of laboratory instruction in chemistry and bacteriology. and (3) practical instruction in infectious diseases.

For the various regulations for the D.P.H. course and examinations, see page 20.

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PUBLIC HEALTH

Professor : E. W. HOPE, M.D., D.Sc.

Assistant Lecturer (vacant)

Tutor, HUGH R. JONES, M.D. D.P.H., B.Sc.

The course consists of six months' theoretical and practical instruction.

1. *Introductory.* Chemical and physical laws. The use of logarithms.
2. *Water.* Sources of supply. Impurities. Purification. Diseases due to polluted water.
3. *Air.* Composition. Impurities and their effects upon health.
4. *Ventilation.* Air space. Montgolfier's formula. Quantity of air required. Warming. Lighting. Coal gas and water gas.
5. *Meteorology.* Climate. Weather. Meteorological instruments.
6. *Buildings.* Site. Aspect. Materials. Construction. Schools. Hospitals. Reading of plans.
7. *Disposal of refuse.* Historical. Evolution of sewage treatment. Septic tank. Refuse destructors. Refuse from abattoirs. Offensive trades, etc.
8. *Food.* Classification. Composition. Energy. Dietaries. Adulterations. Diseases due to food.
9. *Specific Diseases.* Aetiology. Infection. Disinfection. Vaccination.
10. *Vital Statistics.* Essentials. Mortality from special diseases. Life tables.
11. *Sanitary Law.*
12. *Model Bye-laws.*

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Practical Sanitary Work

	No. of Demonstrations.
Sanitary supervision of courts and alleys ...	1
Inspection and measurement of cellar dwellings, and house to house visitation	1
Examination of better class houses on complaint of conditions prejudicial to health... ...	1
Details of action taken on notification of infectious sickness; special means taken to investigate outbreaks of such sickness ..	1
Inspection of canal boats	1
Inspection and regulation of common lodging-houses and sub-let houses	2
Inspection of—	
Abattoirs and private slaughter houses ...	2
Fish and fruit markets	1
Inspection of offensive trades	1
Inspection of factories and workshops	1
Prevention of smoke nuisances	1
Action under Food and Drugs' Act	2
Inspection and administration of dairies, cow-sheds and milk shops, etc., under Orders of Local Government Board	2
Administration of Contagious Diseases (Animals) Acts	1
Inspection, etc., of bakehouses	1
Course of proceedings taken to effect abatement of nuisances, including attendance at police court	1
Registration and keeping of records of sanitary work, statistical methods, etc., etc. ...	2
Industrial schools	1
Artisans and labourers' dwellings, etc.... ...	1
Destructor and disinfector	1
Sewage farm	1
	26

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The laboratories are open to students every day from 9-30 a.m. to 5-30 p.m.

Special demonstrations and tutorial classes are held twice weekly at 2-30 p.m.

The whole curriculum is covered in six months. A revision class will be arranged during the month preceding the examinations of the Universities of Cambridge and Victoria, and of the London Conjoint Board.

It is expected that students will submit regularly to the tutor written answers to questions.

TEXT-BOOKS.—*Theory and Practice of Hygiene*, Notter and Firth, Churchill, 24/-; *Hygiene*, Whitelegge, Cassell's, 7/6; *Bacteriology*, Muir and Ritchie, Pentland, 12/6; *Practical Bacteriology*, Kanthack and Drysdale, Macmillan, 4/6; *Practical Sanitation*, Reid, Griffin, 6/-; *Model Bye-laws* (Knight's edition); Stevenson and Murphy, *Hygiene* (for reference).

It is essential that students should read an elementary text book on chemistry and on physics.

BACTERIOLOGY

Professor: RUBERT BOYCE, M.B.

HUGH R. JONES, M.A., M.D., D.P.H.

I. THE NUTRIENT MEDIA

Broth. Gelatine. Agar. Serum. Potato. Media for special bacteria.

II. STERILIZATION

Action of super-heated steam (the autoclave). Koch's steam sterilizer. Hot air sterilization. Action of antiseptics in albuminous and non-albuminous fluids. Classification of antiseptics.

III. FILTRATION

Filtration through cotton, sand, granulated sugar, etc. Filtrations through porous earths. Chamberland's filter. The Berkefeld filter. The filtration in water works.

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IV. Disinfection

Disinfection of the person, skin, sputum, excreta, clothes, rooms, wounds. Surgical dressings.

V. Examination of the Air

Petri dish and plate-glass cultures. Apparatus of Hesse, Miquel, Straus and Würtz, Sedgewick, etc. Examination of sewer gas. Bacterial distribution in the air.

VI. Examination of Fluids

The bacteria of drinking waters and sewer water. The bacterial distribution in water.

VII. Examination of Soils

Aerobic and anaerobic bacteria and their distribution in the soil. The pathogenic bacteria found in the soil. The nitrifying bacteria.

VIII. Examination of Foods

Beer, milk, butter, flesh. Food inspection—infected food. Sterilization of foods.

IX. Examination of the Bacteria of the Body

The bacteria of the skin, of the mouth, stomach, and upper and lower intestine. Examination of the fæces in health and disease. Examination of pus. Examination of sputum.

X. Cultivation of Bacteria

Comparison of growth upon various media. Liquefying and non-liquefying bacteria. Chromogenic bacteria. Saprogenic bacteria. Pathogenic bacteria. Moulds, fungi, and yeasts.

XI. Influence of Oxygen, of Reaction, and of special substances upon the growth and products of certain Bacteria

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XII. Action of Physical Agents upon Bacteria

Heat, attenuation, resistance of spores. Light. Centrifugalization and shaking. High pressure.

XIII. Morphology and mode of Reproduction of Bacteria

Staining for bacteria. Drop cultivation. Pleomorphism. Involution forms. Classification of bacteria.

XIV. Products of Bacteria

Fermentation. Colouring matters. Ptomaines. Tox-albumins. Diastases.

XV. Modes of Infection

Epidemics, sporadic and endemic disease. Infection of air, water, soils, foods.

XVI. Mode of Action of the Pathogenic Bacteria

Inoculation of animals. Immunity, natural, acquired, hereditary. Susceptibility. Local and general reaction of the tissues, inflammation, fever.

XVII. The Attenuation and Exaltation of Virus

Vaccines. Serums. Vaccination (Jennerian). Vaccine preservation and storage of calf lymph. The treatment of small pox, cholera, anthrax. symptomatic anthrax, glanders, tubercle, rabies, tetanus, diphtheria.

XVIII. Study of Special Organisms

Staphylococcus pyogenes aureus, citreus, albus. Streptococcus erysipelatosus. Sarcinæ. Bacillus anthracis, subtilis, mallei, pyocyaneus, fluorescens, diphtheriæ, Fränkel's pneumococcus, Friedländer's pneumococcus, septicæmiæ hæmorrhagicæ, typhosus, coli communis, enteritidis sporogenes, Zopfii, mesenteroides, prodigiosus, tetani, mycoides. Spirillum choleræ Asiaticæ, of Finkler-Prior, Metschnikovii. Proteus vulgaris. Actinomyces. Aspergillus niger. Favus.

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CHEMISTRY

Professor: J. CAMPBELL BROWN, D.Sc., F.I.C.
and ASSISTANTS.

The laboratory course in chemistry is held in the Chemical Laboratories of University College, supplemented by tutorial revision classes.

The course includes preparation of standard solutions; alkalimetry and acidimetry, standard permanganate; estimation of iron, oxalic acid, chloride of lime, estimation of oxygen and carbonic acid in air, detection in moderate quantities in air of ammonia, chlorine, hydrochloric acid, sulphur chloride, coal gas, nitrous gases, carbonic oxide, bisulphide of carbon vapour; water analyses and calculations; detection and estimation of lead in water, detection of copper and iron. Microscopic examination of water deposits, fats. Partial analyses of butter, milk, bread, etc.; estimation of alcohol in beer; estimation of carbolic acid, arsenic, and other examples of gravimetric work.

INFECTIOUS DISEASES

N. E. ROBERTS, M.B., D.P.H.

R. J. RICHARDSON, M.B.

A three months' practical course of instruction in Infectious Diseases is given at the Netherfield Road, Grafton Street, and Parkhill Hospitals, for those requiring it.

Fee.—£3 3s.

TUTORIAL CLASSES

Revision classes are held in all the subjects of the course.

*** *The above courses may be taken out at any time, and students are allowed to work daily in the Laboratories.*

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FEES FOR SEPARATE COURSES

		£	s.	d.
Bacteriology		5	5	0
Chemistry		5	5	0
Practical Sanitation	Six Months	10	10	0
	Three Months ...	5	5	0
	One Month	3	3	0
Infectious Diseases		3	3	0
Public Health Lectures		4	4	0
Tutorial Classes, alone		7	7	0

A Composition Fee (£21) has been instituted to include Bacteriology, Chemistry, Practical Sanitation, and Tutorial Classes.

This fee is payable in one sum at the commencement of the course, or in two instalments at intervals of three months.

All fees must be paid to the Dean of the Medical Faculty when the course is begun.

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MUSEUM

The Museum of Hygiene is in connection with the School of Hygiene. It contains many valuable Meteorological instruments, models, and specimens, illustrative of sanitary work, good and bad. Among the exhibits are (1) a full-sized model of the drainage of a house, according to the most modern principles of sanitation; (2) a section of a street showing construction, electric light cables, gas and water mains, etc., sewers and connections of the drainage of house and street; (3) full-sized section of the Oswestry filter beds for the Vyrnwy water supply of Liverpool; (4) ventilators of all kinds, including an electric fan; (5) pipes, gulleys, closets, and building materials; (6) filters, sterilizers, and water-testing apparatus; (7) exhibits of good and bad plumbing; (8) septic tank in working order; (9) old wooden water pipes, stone Roman water pipes, etc. Additions are being constantly made to the collection.

The Museum is open to the public daily from 10 a.m. to 5 p.m., and on Monday and Wednesday evenings.

Evening Sanitary Science Lectures.—Systematic evening courses are held during the winter. They are open to all interested in sanitary science, and are necessary for candidates for the sanitary inspection certificate of the Victoria University. At the close of the course, examinations are held and certificates awarded to successful candidates.

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COLLEGE LIBRARY

Librarian: J. SAMPSON

The College Library contains a collection of standard works on medicine, surgery, and allied sciences, which may be taken out under certain regulations. The collection has been recently re-arranged and catalogued; and the collection is kept up to date by the constant addition of new works, under the supervision of the Honorary Librarian of the Medical Faculty, Professor SHERRINGTON.

In addition to the general College Library, smaller departmental libraries, containing periodicals, works of reference, and plates, are contained in the Public Health and Pathological departments. Students are allowed the free use of these collections, but no book may be removed from the department.

STUDENTS' COMMON ROOMS AND LUNCHEON ROOMS

The College contains common rooms, which are under the control of the students. One large common room in the Thompson Yates Laboratories is set apart for the use of students. The luncheon rooms are for the present situated in the college quadrangle.

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REGULATIONS FOR DIPLOMAS IN PUBLIC HEALTH

VICTORIA UNIVERSITY

An examination in Public Health is held yearly, beginning about the middle of July, under the following regulations:

1. The examination is in two parts, and is written, oral, and practical.

2. Candidates, before entering for either part of the examination, must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates—

[1](1) Of having attended an approved course of instruction in Public Health in a College of the University, or in a college or medical school recognized for this purpose by the University.

[1](2) Of having attended, after obtaining a registrable qualification, during at least six months' practical instruction in laboratories approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man.

(3) Of having, before or after obtaining a registrable qualification, attended during not less than three months the clinical practice of a hospital for infectious diseases approved by the several licensing bodies recognized under the Medical Act.

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[1] May be modified in the case of practitioners qualified before 1890.

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(4) Of having practically studied the duties of out-door sanitary work for not less than six months under the medical officer of health of a county or of a large urban district.[2]

3. Candidates may present themselves for Parts I and II separately or at the same time, *provided that no candidate be admitted to Part II unless he has already passed in Part I.* No candidate's name will be published until he has satisfied the examiners in both parts of the examination.

4. The fee for each part is £5 5s., and must be paid on or before July 1st in each year. For any subsequent examination in the same part the fee will be £3 3s.

Every candidate who has passed both parts of the examination, and who is legally registered, will receive a Diploma in Public Health.

Subjects of Examination

Part I

The subjects of examination are as follows :—

1. *Chemistry as applied to Public Health.*
   (a) Chemistry, with specal reference to the examination of air and water.
   (b) Methods of qualitative and quantitative analysis.
2. *Physics as applied to Public Health.*
   (a) Elements of heat, with special reference to warming, ventilation, and meteorology.
   (b) Meteorological instruments and their use.
3. *Engineering as applied to Public Health.*
   (a) Water supply.
   (b) Drainage, sewerage, and disposal of refuse,
   (c) Construction of dwellings, schools, hospitals, including their warming and ventilation.
   (d) Geological data referring to the above.
   (e) Interpretation of plans.

[2] A Candidate who has acted as a Medical Officer of Health for a period of not less than six months may be exempted from the operation of this clause.

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4. *Microscopy as applied to Public Health.*
   (a) Foods, their adulterations, contaminations, and parasites.
   (b) Air and water, their microscopical impurities.

5. *Practical Pathology and Bacteriology.*
   (a) Practical Bacteriology, detection and cultivation of vegetable parasites, bacteriological analysis of air and water.
   (b) Recognition of parasites and of the lesions which they produce in man.
   (c) Recognition of diseased meat.

Part II

The subjects of examination are as follows :—

1. *Ætiology of Disease.*
   (a) Pathology of epidemic and endemic diseases including diseases of animals communicable to man.
   (b) Influence of unwholesome food, air, water, occupation, dwelling, climate, season, soil.

2. *Sanitary Law and Administration.*
   (a) Domestic and general sanitation of houses, villages, and towns.
   (b) Regulation of offensive, dangerous, or unhealthy trades and occupations.
   (c) The prevention and control of epidemic disease by isolation, disinfection, vaccination, and other methods.
   (d) Statutes and bye-laws relating to Public Health.

3. *Vital Statistics.*

4. *Sanitary Reporting.*

   The candidate will be required to visit and report upon the sanitary condition of some locality assigned to him by the examiners.

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ORDER OF EXAMINATION

Part I

The examination will include :—

1. A two hours' written examination on chemistry as applied to Public Health.

2. A four hours' practical and oral examination on chemistry as applied to Public Health.

3. A three hours' written and oral examination on physics and engineering as applied to Public Health.

4. A four hours' practical and oral examination on bacteriology, the pathology of infectious diseases, diseased meat, and the use of the microscope as applied to the examination of food, air, and water.

Part II

The examination will include :—

1. A three hours' written examination on the ætiology of disease.

2. A three hours' written examination on sanitary law and administration, and on vital statistics.

3. Sanitary reporting.

4. Oral examination on the above subjects.

University of Cambridge

Regulations for the Examination in Sanitary Science

Two examinations in so much of state medicine as is comprised in the functions of medical officers of health will be held during the year 1900 in Cambridge. Each examination will consist of two parts. Part I will begin on the first Tuesday in April and October respectively; Part II will begin on the second Tuesday in April and October respectively; and each Part will end on the following Thursday.

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Any person whose name is on the *Medical Register* is admissible as a candidate to this examination provided—

(I) A period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the time when he presents himself for either part of the examination ;

(II) he produce evidence of having, before or after obtaining a registrable qualification, attended the clinical practice of a hospital for infectious diseases approved by one of the licensing bodies recognized under the Medical Acts ;

(III) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months on one or more courses approved by the Syndicate of Practical Laboratory Instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man ;

(IV) he produce evidence of having, after obtaining a registrable qualification, practically studied for six months the duties of out-door sanitary work.

(*a*) In England and Wales, either under the medical officer of health of a county or of a single sanitary district having at the date of the last census a population of not less than 50,000, or the medical officer of health of a combination of two or more sanitary districts having collectively at the date of the last census a population of not less than 35,000 ; or

(*b*) in Scotland or Ireland under the Medical Officer of Health of a county or of one or more sanitary districts having at the date of the last census a population of not less than 30,000 ; or

(*c*) under a medical officer of health who is a teacher in the department of Public Health of a recognized medical school.

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A certificate of an assistant officer of health of a county or a large urban district may be accepted, provided the medical officer of health of the county or district consents to the assistant officer giving such instruction.

*** Any candidate who shall produce evidence that he has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation.

*** The provisions as to previous study shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1, 1890.

The first part of the examination will have reference to the general principles of sanitary science, and will comprise the following subjects :—

The elements of chemistry and physics : methods of chemical analysis, and in particular the analysis of air and water. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics, in their application to warming, ventilation, water supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water-supply. The elements of meteorology in relation to health. Principles of building-construction in their application to dwellings, hospitals, and schools. The disposal of sewage and refuse, and the general principles of sanitary engineering. Disinfectants, their chemistry and use. The chemical and microscopical examination of foods, and the detection of the commoner forms of contamination. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The pathology of infection, and of the diseases of animals that are transmissible to man.

The second part of the examination will have reference to state medicine and to the applications of pathology and sanitary science, and will comprise the following subjects :—

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Laws and statutes relating to Public Health*. The model bye-laws of the local government board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cow-sheds, etc. Inspection of meat and other articles of food. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. Unwholesome trades and occupations, and the diseases to which they give rise. Nuisances injurious or dangerous to health. The effects on health of season and climate. The principles and methods of vital statistics in relation to Public Health.

N.B.—The foregoing schedule is not to be understood as limiting the scope of the examination, which will include every branch of sanitary science. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which bear upon the duties of medical officers of health.

The examination in both parts will be oral and practical as well as in writing. One day at least will be devoted to practical laboratory work, and one day to oral and practical examination in, and reporting on, subjects connected with outdoor sanitary work.

Candidates may present themselves for either part separately, or for both together, at their option ; but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the examiners in both parts.

* All candidates will be examined in the provisions of the English statutes relating to Public Health, but any candidate will be given an opportunity of shewing a special knowledge of other sanitary laws in operation within the British Empire, provided that, *when applying for admission to the examination, he give notice* of his desire and indicate the special law he proposes to offer.

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Every candidate will be required to pay a fee of six guineas before admission or re-admission to *either part* of the examination, but candidates, who have presented themselves before the year 1896, will be re-admitted to either part on payment of a fee of five guineas

Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health.

All applications for information respecting this examination should be addressed to Dr. ANNINGSON, WALT-HAM-SAL, CAMBRIDGE, Secretary to the State Medicine Syndicate.

Candidates who desire to present themselves for the examination must send in their applications on forms supplied for the purpose, and transmit them with the fees to J. W. CLARK, M.A., REGISTRARY, UNIVERSITY OF CAMBRIDGE, for the April examination on or before March 17th, and for the October examination on or before September 15th. The prescribed certificates must be sent to the Registrary so as to reach him not later than 10 a.m. on March 29th and September 27th respectively. Cheques should be crossed 'Barclay & Co. Ltd.' The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled without an additional fee to be a candidate on one subsequent occasion.

Candidates must before admission to either part of the examination produce evidence of having satisfied provisions I, II, and III, and before admission to Part II evidence of having satisfied provision IV, above mentioned.

***** The Examination Papers set at former examinations can be obtained at the Cambridge University Press Warehouse, Ave Maria Lane, London. Price 1s. each set, or by post 1s. 1d.**

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Royal College of Physicians of London and Royal College of Surgeons of England

Regulations for the Diploma in Public Health

Section I. Examination

I. Candidates must be registered under the Medical Act.

II. The examination, consisting of two parts, will be held in the months of January and July in each year.

III. Candidates must pass Part I before being admitted to Part II.

IV. Candidates may enter for Parts I and II separately, or at the same time, but no candidate's name will be published until he has passed in both parts of the examination.

V. The examination in each part will be written, oral, and practical.*

VI. The fee for each part is £5 5s., and must be paid three days prior to the day on which the examination commences.

VII. A candidate who fails to satisfy the examiners in either part may present himself again at the next examination on payment of a fee of £3 3s.

VIII. The diploma awarded is entitled 'Diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England.'

IX. A candidate intending to present himself for either part of the examination must give 14 days' notice in writing to the Secretary, at the Examination Hall, Victoria Embankment, W.C.

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* Note.—The Practical Examination in Part II may include a visit to, and report on, some selected premises.

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Section II. Conditions of Admission to Examination

I. *For Candidates registered under the Medical Act on or before the 1st of January*, 1890

A candidate registered under the Medical Act on or before the 1st of January, 1890, will be admissable to Part I of the examination on producing evidence of being at least 23 years of age, and to Part II on producing evidence of being at least 24 years of age.

II. *For Candidates registered under the Medical Act after the 1st of January*, 1890

A candidate will be admissable to examination in Part I on producing evidence—

1. Of having been in possession of a registrable qualification in medicine, surgery, midwifery for at least 12 months.
2. Of having attended, after obtaining such registrable qualification, practical instruction in a laboratory, recognized by the Examining Board in England, during a period of six months.
3. Of being at least 23 years of age.

A candidate will be admitted to Part II of the examination on producing evidence—

1. Of having, during a period of six months after obtaining a registrable qualification, either practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, or else held appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma.

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* 2. Of having attended the clinical practice of a hospital for infectious diseases recognized by the Examining Board in England, either before or after obtaining his registrable qualification in medicine, surgery, and midwifery.

3. Of being at least 24 years of age.

Syllabus for the Examination

Part I

The first part of the examination will have reference to the general principles of Sanitary Science, and will comprise the following subjects :—

The elements of chemistry, physics, and geology. Methods of examination of water and air for hygienic purposes, including a knowledge of analytical methods and the interpretation of results. The chemical composition of foods, and the usual forms of adulteration. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics, in their relation to warming, ventilation, water supply, and drainage. Principles of building-construction in their application to dwellings, hospitals, and schools, etc. Meteorology in relation to health ; meteorological instruments, their construction and use. The general principles of sanitary engineering, including the disposal of sewage and refuse. The reading and interpretation of geological and ordnance survey maps. The microscopical examination of foods and the detection thereby of the common forms of adulteration. The methods of bacteriological analysis, and the bacteriology of water, air, food, and soil. Disinfectants, their chemical and bacteriological efficacy and use. The general pathology of infection, and the diseases of animals that are transmissible to man. Nature of immunity and protection from infectious disease.

* This certificate is not required in the case of a candidate who produces evidence that he has commenced special study in Sanitary Science before the 1st January, 1894.

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Part II

The second part of the examination will have reference to the application of the principles of Sanitary Science, and will comprise the following subjects :—

Laws and statutes relating to Public Health, including the model bye-laws of the local government board. General epidemiology with reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of epidemic, endemic, and other diseases at home and abroad. Unwholesome trades and the diseases to which they give rise, and the prevention of nuisances arising therefrom. Nature and origin of parasitic diseases. Nuisances injurious or dangerous to health. Causes or conditions which produce climate, general effects of climate, acclimatization. Effects on health of overcrowding, vitiated air, impure water, polluted soil, and bad or insufficient food. Duties of Sanitary Authorities and their officers.

Vital statistics :—Calculation of population, birth rate, marriage rate, and death rate ; mortality from zymotic diseases ; sickness rates ; relation between occupation and mortality ; life tables, their construction and interpretation ; the value of statistical facts, averages, and methods.

FREDERIC G. HALLETT,
Secretary.

Books of questions set at the examinations for the Diploma in Public Health during the years from 1887 to 1899 may be obtained on application to Messrs. Taylor & Francis, Red Lion Court, Fleet Street, London, E.C. Price 6d., post free 6½d. each.

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